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NEWS IN BRIEF**Mini 'lost' in PO pay dispute**

WITH the telephone billing backlog approaching £300 million this week, neither side in the Post Office pay dispute (CW, May 10) has given way, and with systems such as Laces at Heathrow still out of operation, the Customs cargo warehouses are overflowing with uncollected imported goods.

Included in these is a minicomputer of US origin which was to be used for Prestel billing. It has been temporarily 'lost' along with some of its disc drives.

Times stalemate

THE compromise offer by The Times management over direct input by journalists (CW, May 10) has been rejected by the National Graphical Association. The NGA has agreed, however, to meet again with management this week, in conjunction with the journalists' union.

Better printout

IMPROVED quality over conventional computer printout is one of the main reasons given by the Computer Management Group for deciding to install an 8,000 lpm Honeywell Page Printing System worth £12,000 at its Croydon headquarters.

Control system

BUILDING on its Videspec and Spec 200 range of industrial and process control equipment, Foxboro has added a micro-based control module called Microspec and a new communications network called Foxnet to produce an integrated industrial control system called Spectrum.

After the silicon machines . . .

ALTHOUGH the next top-end machine from Univac will still use Emitter Coupled Logic (ECL) technology, and be between four and six times as fast as the Univac 1100/80, the next system could feature semiconductor circuitry based on Gallium Arsenide (GaAs). That is how Barry Borgerson (right), director of research and technical planning for Univac at Blue Bell, Pennsylvania, sees it. He told Computer Weekly that the next ECL-

based machine would appear in three to four years, and that it would probably be another four years before the GaAs versions were ready for delivery.

Commenting on the advantages of GaAs, he said, "It has up to six times the electron mobility of silicon, and can therefore operate up to six times faster. Also, we have found that by cooling GaAs circuits with liquid nitrogen we can get even further speed improve-

ments — up to four-fold increases compared to normal operating temperatures." And since GaAs semiconductors feature an insulating substrate, another feature is low power consumption.

The use of cryogenically cooled Josephson Junctions is also being looked at by Univac, specifically those manufactured from niobium or lead. These are "maybe a decade or more" away in development.



BORGERSON . . . "Six times faster than silicon . . ."

Norsk adds two models to mini line

NORWAY'S enterprising minicomputer manufacturer, Norsk Data, has added two formidable new models to its Norsk line of minicomputers. Called the Nord-500 and the Nord-100, they will be available in the UK through Richard Norton (Nord) of London.

As with the earlier Nord-50 and Nord-10/S, the 500 is a 32-bit machine and the 100 is 16-bit, and a 100 is required as front-end to a 500, with both machines sharing the main memory.

The Nord-500 offers an enormous eight Megabytes, 32 Megabytes of main memory capacity and is three times as powerful as the Nord-50. The maximum main memory is double that available on the

largest IBM machine, the 3033. It is rated at five million instructions per second, and has a minimum 32K-byte cache, extendable to 64K-bytes. The cache is allocated half to data and half to instructions, and can be sub-allocated to different applications in a multiprogramming environment.

It includes hardwired floating point arithmetic operating on 32 and 64 bits, and maximum disc capacity is 4.3 Gigabytes of data and 4.3 Gigabytes of instructions.

The Nord-100 uses the AMD 2900 bit-slice family, and also supports a maximum 32K-bytes. It is built around a 1.8 Megaword per second bus, and without cache matches the performance

of the Nord-10/S with cache.

Adding a 2K-byte cache and fast memory management improves performance to between 1.2 and 1.8 times that of the 10/S.

Both machines run under the standard Sintral III VS operating system, which together with the Fortran 77 compiler is included in the hardware price. IBM compatible RPG II, Ansi 74 Cobol, Basic, Pascal, Coral 66 and Simula compilers are all charged, as is the Simas database system.

Minimum Nord-500-100 configuration with 256K-bytes of memory, 37 Megabytes on disc and a tape unit costs £120,000, and will be available early next year. The Nord-100 is available now.

East Germany moves into market for OEM daisy wheel printers

RATHER than investing heavily in durable materials for daisy wheels, Robotron is producing a simple, low-cost plastic wheel which it believes will have a life of three months in normal use. Customers will get a supply of spare daisy wheels, which Robotron says are simple to change. The line width is 132 characters standard, expandable to 210, and an original and up to five copies can be printed, red and black printing is possible, and both printing and paper feed are bi-directional.

Daisy wheel printers are by far the most widely used devices

Suspension threat angers GEC men

GEC development engineers, currently involved in a pay and grading structure dispute with the company (CW, May 10), have said that they will find higher-paid jobs elsewhere if the management goes through with its threat to suspend those still taking action after May 21.

A letter from the company to all 450 development engineers at GEC's two Coventry sites said the strike action by only 16 key people was "adversely affecting" System X work. "This letter has incensed many of our members," said an ASTMB spokesman. "The company could lose the goodwill we have been showing during the strike. We have attempted to hit only short-term work, not long-term prospects."

Telecomputing has for some time been committed to developing native mode 2900 versions of TPS, to ensure the forward compatibility of TPS-based application systems. However it has until now assumed that a VME/B product would be the first required and last year ordered a 2950 specifically to develop the K version (Software File, June 20, 1978).

The CEGB contracts mean that a VME/B version will now almost certainly be the first to appear and represent a significant vote of confidence for Telecomputing in the wake of recent ICL TP announcements (CW, April 19).

THE IDPM's micro and management conference is to be preceded by an extraordinary general meeting at the Bloomsbury Centre Hotel, WC1, on May 23 starting at 10 am. The main items on the agenda are resolutions covering the IDP-DPMA merger.

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Bishop's move used all the best bits

A READER in Chislehurst has turned up an interesting example of the use of a binary character code long before the Information Age. He refers to the Shutter Telegraph, which was used during the Napoleonic Wars to communicate between London and Dover, before the introduction of the better-known semaphore telegraph. The system, which was invented by all the people of the Bishop of St David's, enabled messages to reach the coast from London in only seven minutes.

Wohl's "History of Chislehurst", published in 1899, describes the building in the town that served as one of the telegraph stations. On its roof was a frame from which hung six swinging shutters. When these were held up, end-on to the observer, they would be invisible, and represented binary 0. Let down and visible, they indicated 1. Thus there was a 6-character code which represented the whole

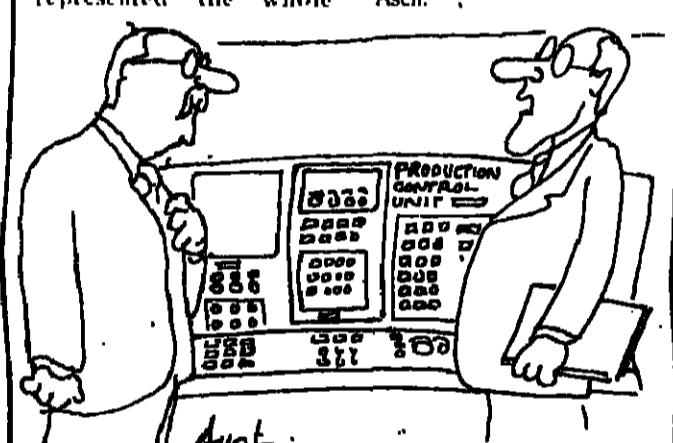
alphabet and a range of commonly-used phrases.

At each of the repeater stations from London to Dover, a chap would squint through a telescope at the neighbouring station and set his shutters to match.

The system was used from 1796 until 1816, when the less cumbersome semaphore telegraph came along, with its swivelling arms like Navy signallers' flags.

I have no baud-rate figures for the Shutter Telegraph's data transmission speed, but I can't imagine they were very high. It is also difficult to conceive of a system that is less secure. What do you do when you catch a suspected telegraph tapper and he claims that all he was doing was watching Great Crested Grebes?

Just think — if the semaphore hadn't come along we might now be using Episcopal code instead of ASCII.



"It blows up at programmed intervals to give the engineers job satisfaction..."

Random accessory?

I HAVE received the following announcement from a well-known maker of calculators:

Hewlett-Packard are offering a free accessory worth £10.35 with any of their series E calculators bought between now and June 30. The offer can be redeemed only through HP authorised dealers.

Suggestions on a postcard, please (to Hewlett-Packard, not to me).

It goes on to list the models

In the series E, and extol their virtues. But does it say what this accessory is? No, it doesn't. I'm agog with curiosity! Whatever do you suppose it could be? A crocodile-skin carrying case? A diamante program card holder? A chinoiserie instruction book stand?

Suggestions on a postcard, please (to Hewlett-Packard, not to me).

It goes on to list the models

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DEC wins £1m contract to monitor radar equipment

A NETWORK of Digital Equipment computers with communications based on the X25 packet switching protocol is being set up by the Civil Aviation Authority for monitoring and controlling remote radar installations.

Under a contract worth more than £1 million, DEC is supplying the CAA with 24 PDP-

11 and LSI-11 processors, and is designing

and implementing the applications software. The network will centre on a dual PDP-11/20 configuration at the London Air Traffic Control Centre at West Drayton, Middlesex, which will be linked to a PDP-11/34 at each of six long-range radar stations located through-

out the UK. Data will be displayed at West Drayton on DEC VT30 colour terminals and remedial action required relayed back to the remote radar station.

If West Drayton fails, each remote 11/34 system can continue under local operation.

Gamma group sets up US subsidiary

CONFIDENT that it is bigger than any of its US counterparts, the Nottingham-based Gamma Computer Group has set up a US subsidiary to take a share of the US market for Digital Equipment end user systems.

Gamma has been eyeing the US market for some time (CW, November 24, 1977), and the firm's managing director, George Coggan, sees the US as offering far greater potential for overseas expansion than Continental Europe, so Gamma has decided to concentrate on the US market.

Systime plans US sales drive as well

GAMMA's biggest competitor in the DEC systems business, Systime of Leeds, also plans a move into the US market. The main difference is that Systime will be selling systems software products there. The most important of these at the moment is Systime, the teleprocessing package developed with financial help from Insaec, the NEB's international software marketing consortium (CW, April 20).

Systime says that it will not start selling in the US until next year, and that it will go ahead by itself if Insaec is wound down as a result of the new government's policy of restricting the activities of the NEB.

Keen to import Apple II

FOLLOWING discussions between the two companies, Keen Computers in Nottingham is to import the Apple II Computer direct from the makers in Cupertino, California.

Keen is setting up a distribution network in the UK and is also expanding its software development operations. The intention is to provide an increased range of packaged software for the Apple II.

New word processing technique

By Keith Jones

ALL the 1978 export figures for digital and analogue systems are missing from the latest set of Department of Industry statistics. Applications few effects is important, but in special surprising things can happen.

Most complaints of "stuffiness" are in reality complaints of insufficient air flow.

As far as noise is concerned, printers are the main culprits, although there have been big improvements recently. Deve-

systems and analogue/hybrid machines.

The DoI has decided to leave them out because the faulty figures printed in the first three quarters' statistics for 1978 have not yet been fully revised by the Customs which supplies the DoI with all its overseas trade figures.

The DoI assured Computer Weekly that revised figures for 1978 would appear in the statistics for the first quarter of 1979 which should be published in

Progress on statistics

THE computer industry sector working party at the National Economic Development Organisation appears to be making real progress now in its efforts to persuade the Customs to provide more detailed overseas trade statistics for computers.

The computer SWP secretary, Reg Watt, told Computer Weekly that the level of co-operation from the Customs had improved considerably since early this year when Nedd's problems were highlighted in Computer Weekly (CW, February 15).

The biggest cause of discontent in the computer SWP at the moment is that several different types of peripheral equipment are lumped together under the completely unhelpful heading "other peripheral units".

Imports under this heading came to £260 million last year but this figure gave no indication of what types of foreign-built peripheral equipment were increasing their share of the UK market.

Watt said that a breakdown into about six different peripheral categories was hoped for.

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1979

OP SPOT

Why more good training schemes are needed

WHEN Andy Foers of British Aerospace sent me a letter about operator training (Op Spot, April 26) he touched upon a subject of importance to operations staff and opened up discussion on this much neglected area.

I, for one, was prompted into writing a piece about it (Op Spot,

May 3) and also asked for other operations staff to put forward their views.

And now a shift leader at an ICL based installation has taken up the issue by relating some of his experiences.

He writes: "When we got our ICL 2903 two years ago, we were

completely inexperienced in computer matters. Fortunately for us, our group has its own computer bureau, and it was very helpful to us."

The operators started their training by taking the ICL 2903 appreciation course "which provided an excellent introduction but was a bit hard going because we were unfamiliar with the terms used."

After that, they were sent on a course run by ICL. It was of little use, as he explains:

"Machine time was limited to half-hour sessions which were shared out among the 14 of us on the course — it meant that each of us got about four and a half minutes on the system."

The course was also at the wrong level for many of the persons attending it:

"One operator with 18 months' experience — he was on the course because his DP manager had insisted — knew more about the subject than the instructor, but didn't say a word for the entire two days."

"By way of contrast, there was a girl typist who had been told by her boss that an ICL 2903 was arriving in two weeks and that she was going to operate it."

"Oddly enough, there was also a DP manager on the course, viewing it before sending his operators along — very sensible, as he probably didn't bother them with it after his own experiences."

However, on returning to his installation he found someone capable of teaching him about the system — a programmer:

"I was lucky because at our site there was a programmer who was also an extremely good operator, and over a three month period he taught me an awful lot, and I didn't pick up too many bad operating habits."

He points out that training should be viewed as an on-going matter and stresses the need for

operators to use their own initiative in this regard:

"The most useful thing I have learned is that if you aren't careful you can spend a lot of time searching through files of manuals to find out information. "What I did was set up a file for my own use, comprising the commands, instructions and parameters for programs which were not too frequently."

He said: "When I originally came up with that idea, we were on version 8E of George 2 and not the latest, 8G. The host still stands, but the addresses of the input module, XKYE, and the output module, XKZE, are different. They are now 788 and 785, respectively."

Linton



By Bernard Allen

Meaningful names

SEVERAL weeks ago we had a hint concerning assigning "meaningful" names to George 2 modules from Ron Linton (left) computer operations controller at Manchester Polytechnic (Op Spot, April 28). In essence, he outlined the procedure involved in renaming the modules in order to indicate their function to the operator. Since then Ron has contacted me with an amendment to the hint.

He said: "When I originally came up with that idea, we were on version 8E of George 2 and not the latest, 8G. The host still stands, but the addresses of the input module, XKYE, and the output module, XKZE, are different. They are now 788 and 785, respectively."

As I became familiar with a job, I would remove the details from my file and replace them with details relating to another one. This rapidly improved both my operating and temper.

The course was also at the wrong level for many of the persons attending it:

"As I am concerned, there is absolutely no need for DP staff to get involved with unions."

OPERATORS often complain that nobody listens to their points of view. Well, Op Spot is listening and Bernard Allen would like to hear from you.

Your letter should be sent to Op Spot, Computer Weekly, Dorset House, Stamford Street, London, SE1 9LU. Bernard can also be telephoned directly on 01-261 8035.

Any complaints?

There are over 10,000 job vacancies in this industry, as shown by the number of job advertisements in the various computer publications.

"So if you aren't satisfied with your installation all you have to do is find a position at another. It's as simple as that."

'No need for unions'

WHEN I visit an installation the operators sometimes wish to discuss some of the broader issues affecting operations staff, in addition to talking about their immediate working environment.

And chief operator John O'Reilly, whom I met at Astral Computer Services (CW, May 10) was keen to have his say on operators and unions — something which has cropped up from time to time in past Op Spots.

He said: "As far as I am concerned, there is absolutely no need for DP staff to get involved with unions."

OPERATORS often complain that nobody listens to their points of view. Well, Op Spot is listening and Bernard Allen would like to hear from you.

Your letter should be sent to Op Spot, Computer Weekly, Dorset House, Stamford Street, London, SE1 9LU. Bernard can also be telephoned directly on 01-261 8035.

No flats meant a change of job

FORMER TOPS operations student Steve Ward (Op Spot, January 11) was forced to give up his position at the Edgware, North London, site of the Bankers Automated Clearing Services because he was unable to find accommodation in the area.

Steve, who returned to his home in Tonbridge, Kent, and is now employed as an operator at Jernyn Industries in Sevenoaks, told me: "I really liked the people and the work at BACS, but I just couldn't find a place to live in Edgware or the North London area as a whole."

"The company was very good to me and I have no complaints about them — they even gave me time off to look for a place — but it was no good."

"I was a bit fed-up when I first returned home because I thought I would be unable to find a job as an operator near my home. I was very pleased when I got my present position."

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Standard protocols for open systems taking shape

By Dr Frank Taylor

AN Important meeting of the International Standards Organisation Committee on progressive open system standards will take place in London from June 4 to June 15.

Representatives from all interested countries including Canada, Japan, the US, Germany, France, Sweden, Holland and, of course the UK, the initiator of ISO work in this area will be present at a meeting of Committee TC97/SC18, which will be looking at many significant problems.

Three will almost certainly come under close scrutiny. First is the "model" or consistent scheme or framework for representing such standards, so that interworking is possible.

Next is the decoupling of actual communications standards from inter-system standards, concerned with representation of action and information transferred rather than its transmission.

The third point is the types of liaison which must be catered for, ranging from close-coupled user interactions, such as those found in a time sharing system, through to situations where a little too rigid, and alternative structures will be carefully considered, which allow all types of conceivable transfer to be covered.

Looking into these issues in a little more detail, many interesting and challenging problems appear.

First of all, the present practice of basing a model on a layered structure (CW, February 16 and April 13, 1978), is being very carefully scrutinised.

At the upper levels the accent is on the interworking of systems — action control, file transfer, including perhaps program transfer — of either source or object code; secure trans-

fer protocols, means for data transfer, etc; there are occasions when the rigid layering approach appears to be a little too rigid, and alternative structures will be carefully considered, which allow all types of conceivable transfer to be covered.

Secondly, there is an increasingly good case for decoupling or separating standardisation at the inter-system levels, above the transfer/transmission levels and those within those levels.

At the upper levels the accent is on the interworking of systems — action control, file transfer, including perhaps program transfer — of either source or object code; secure trans-

fer protocols, means for data transfer, etc; there are occasions when the rigid layering approach appears to be a little too rigid, and alternative structures will be carefully considered, which allow all types of conceivable transfer to be covered.

While there are now a considerable number of standards for data transmission links, in terms of marshalling information, such as X25, together with X3, X28 and X29 for packet-switched networks, and HDLC variants to cover many circuit-switched needs, there are no standards yet for end-to-end transfers of one job — i.e. standards which are task or job oriented rather than link oriented.

There are no standards yet, either, for flow control, that is controlling the flow of segments of different tasks along an available path or paths.

Another need here is for agreed standards, based on development of existing standards, for use when offline media are used for transmission, such as floppy discs, or magnetic tape in one of its many sizes and forms.

Thirdly, the type of liaison which must be considered will almost certainly come into sharp focus. Transfers of information within distributed computing elements fall into three classes. They are:

1. Situations involving the control of transfers by a Network Control Centre — usually at a remote location from the active systems which wish to interlink, which has overall control of all resources, and therefore, according to scheduled events, the creation and termination of sessions so that scheduled transfers can occur when scheduled resources are available.

2. Situations where one (primary) active configuration interrogates another (secondary) active configuration to determine if it can:

A. Accept a proposed transfer in terms of standards used (e.g. for encryption, resource needs, information codes, etc.).

B. If affirmative determine when the transfer can be accepted.

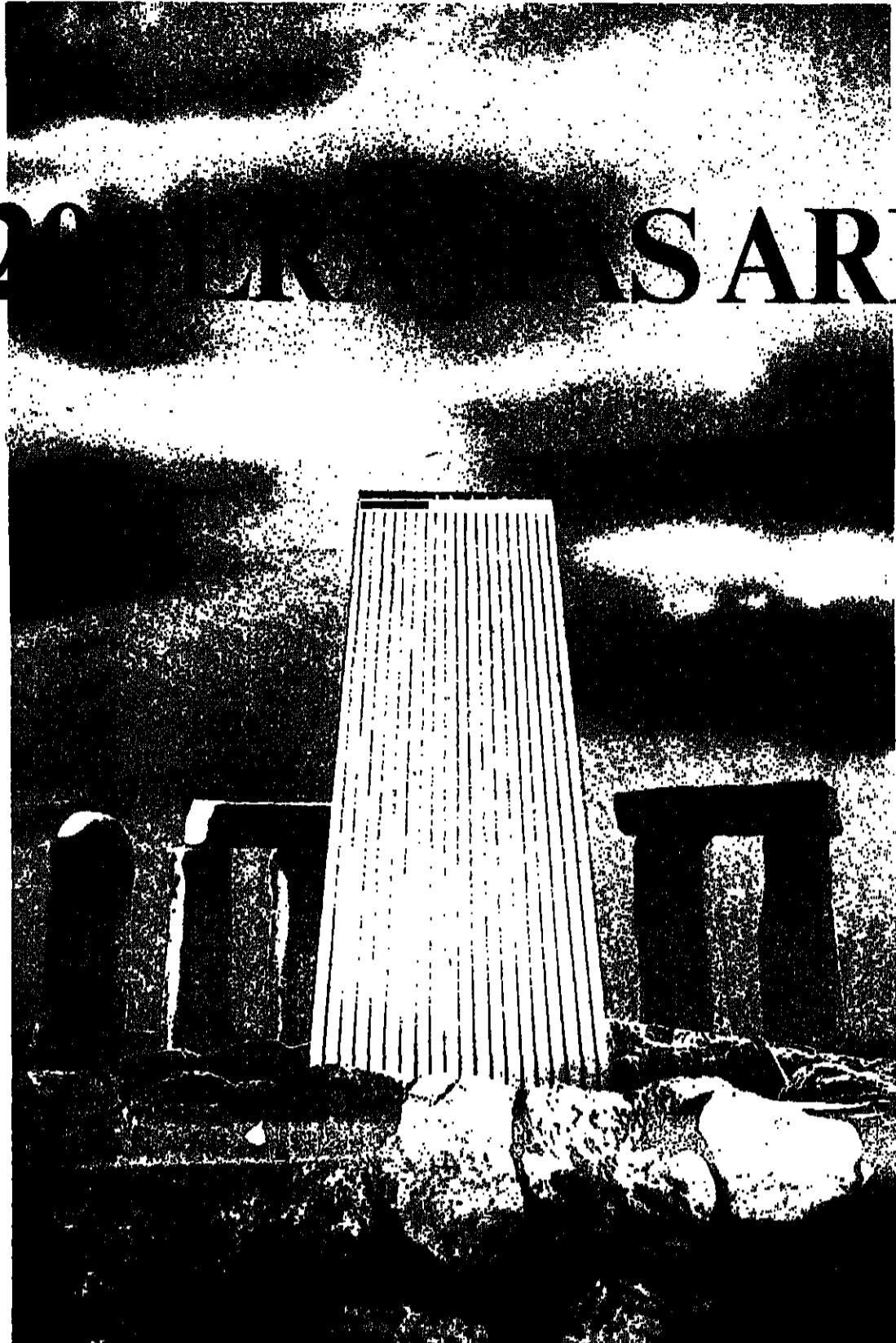
C. Actually initiate the appropriate session (which may be two-way, i.e. interactive) at the appropriate time.

These operations are similar to line control operations at the link level.

3. Situations where a message is sent to a destination of unknown characteristics, except that minimal capability to receive and display the message can be assumed.

In some cases a receipt may be requested at the source, in due

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The UK's seats of learning could lead world in networks

BRITAIN will be leading the world with its universities computing network if current plans of the Computer Board and the research councils bear fruit.

That is the optimistic view of the head of the newly-formed Joint Network Team, Roland Rosner, who is now settling down to draw up detailed plans and pick the rest of his team.

The idea which the Computer Board (which buys all big university computers) and the Science Research Council have come up with is not for a master plan for a network — that would be dangerous to try to formulate at this stage, in Rosner's view.

Rather it is for an upward-compatible spectrum of facilities, involving a hierarchy of networks on national and local level and a range of processors from mainframes to micros.

This is something that is not being attempted anywhere else in the world, Rosner points out, adding: "Maybe nobody else' would be so daft!"

The motivation for the scheme, he explains, is the increasing need of academics and researchers to rely on communications to get the computing they need.

"You can't satisfy each department's needs on a single machine," he says. Pooled computing is already going on, using the Computer Board's two national centres in London and Manchester, and with resource-sharing within regions, with different packages held at different centres.

In addition to the national centres, there need to be both regional and local networks, and all three levels must be compatible and linked, so that users are not restricted in what they can access by bureaucracy or lack of standards, Rosner says.

In particular, local area networks are especially important for the exploitation of micros in universities, as has been pointed out to the Computer Board by Jim Alty of Liverpool University.

A local network would have to be cheap, easy to interface with, and have a high bandwidth in order to enable users to pool their software and their special hardware to the greatest possible extent. An example of such a system would be the "ring main" developed at Cambridge (CW, March 15).

The difference between this scheme and all the networking that goes on in, say, the US, is

that there the networks carry largely terminal traffic.

The UK system will allow files to be transferred between machines, and jobs to be switched to a range of hosts.

The use of graphics over networks is something that is only just starting, Rosner points out, and this requires more elaborate communications than that used by simple terminals.

The principal obstacles Rosner sees in his path are: getting manufacturers to adopt standards, and persuading users to follow the scheme and not "do their own thing" by setting up facilities on their own. The first he describes as "very hairy", but it should be greatly helped, he thinks, by the Computer Board's decision to link standards to procurement (CW, May 25, 1978). The second is an ever-present problem in research centres and universities, where

UK universities could have a system of computing networks unique in the world in its power and versatility if current plans of the Computer Board and the SRC bear fruit. Guiding developments is the new head of the Joint Network Team, Roland Rosner, who talks to *Rory Johnston*.

"not invented here" is a common syndrome.

To start with, the team will have three basic duties. One, to participate with the various centres and institutions in their planning, taking a global view, and trying to influence rather than dictate.

To start with, the team will have three basic duties. One, to participate with the various centres and institutions in their planning, taking a global view, and trying to influence rather than dictate.

Two, to ensure that communications and switching facilities are made available, both on a national and a local level.

On a national level this would involve liaising with the Post Office over PSS, leased lines, and whatever. On a local level it means looking for standard products from manufacturers and encouraging their development. An example would be the Cambridge ring main system.

Three, to obtain standard equipment for attachment to the network, by placing development contracts with systems houses and universities for instance, and by members of the team contributing to development themselves.

By and large the team will arrange for technical work to be done by other people, but it will be important for them to do some practical work just to "keep their ear in", Rosner thinks. "Co-ordinate, participate stimulate," is how he sums up the team's function.

The user interface is one topic he is particularly interested in. One will have to be developed that is "user-friendly" he says, unlike, for instance, EPSS.

How will a user get himself connected to a machine at the other end of the country without having to type in 14 digits? That is the sort of problem Rosner is thinking of. He would also like to develop machine-independent command sets.

Another important job for the team will be helping people test and validate their systems. For this the team will need some hardware of its own and a central set of testing procedures.

For local area networks, the work most needed to be done at the moment, in Rosner's view, is development of concentrators and gateways to the outside world.

Looking at his work as a whole, Rosner says: "We need to keep a sense of proportion. We can't have a very complicated arrangement just to connect a micro to a computer network."

Orlansky reports that in Europe, orders for the 3031 have proved very "soft," with substantial numbers of customers converting them to 4341 orders.

It is this task of being all things to all men, of seeing that simple facilities are provided for some users and very sophisticated ones to others, while keeping the whole thing reasonably coherent, that promises easily to occupy all of Rosner's time for the next three years.

At present he is ensconced on his own at Rutherford Laboratories, where he first got involved in DP as a high-energy physicist in the sixties, and was in the now-superseded network unit under Mervyn Williams.

He has no staff as yet apart from a secretary (five more professionals are to make up the team) nor does he have a boss, which has its compensations as well as its drawbacks. "I have several shoulders I can cry on."

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Subscribers who have special hardware such as cheque sorters or OCR readers that could not be obtained at short notice could install back-up units at the centre if they wished.

According to Louis Scoma, DPS president, 80 firms have

Dons' concern over heavy use of university centres

A REPORT on the future needs of the national university computing centres is expected to be completed by the summer.

The National Centres Working Party, under the chairmanship of Professor Roger Elliott of the Oxford University Department of Theoretical Physics, has been set up by the Computer Board following widespread concern over the heavy demands that are being placed on the computing centres at London, Manchester and Newcastle.

London presents a particular problem since the CPC 8800

working life and the 7800 will follow in the not-too-distant future. A new building for the London centre has already been approved (CW, February 1).

The working party's job is basically fact finding. It is writing to universities asking what their needs are, and will then draw up an operational requirement.

After this manufacturers will be asked whether they can meet the requirement. The Gray machine is one possible candidate for London, as is ICL's



Comet designer Borg Christensen demonstrates his brainchild to Bulmershe College's Roy Atherton.

UK debut likely for Danish micro

AN educational microsystem designed and built in Denmark, and with software communicating with 200 mainframes, is being sold in Denmark by ICL as an intelligent terminal. ICL UK has tested in the machine and is due to sell it here.

The continuous improvement

in the power/cost ratio of hardware can only result in an increase in the <5 years: >5 years age-ratio; if the only way of increasing the stock of programmers is a five-year apprenticeship, then the only answer to the problem is an embargo on new installations for five years!

What the government, NCC, and the professional bodies should provide is precisely what they do provide: funds, training material and syllabuses respectively.

An apprentice is traditionally an untrained dogsboddy, and no one with the ability, and the will, to become a good programmer is ever going to be content with that — a difference, possibly, between those inclined to manual skills and those inclined to mental crafts?

I entirely agree with Mr Hamilton that this better way is neither a computer science degree nor a few weeks of language training. The ideal way, I would suggest, is something between the existing HNC and HND schemes, with perhaps six months' full-time study, followed by 18 months' part-time.

The first six months would provide a solid base and give time for enough actual programming to demonstrate a candidate's worth to a potential employer, with the necessary refreshments being added later, in step with practical experience. (BEC/TEC Committee please note.)

It is not for the government, NCC or a professional body to

ICL in Copenhagen is complete systems based on 2903 or 2904 using Mimic the Comets acting as interface modules.

The basic Comet system includes 32K bytes of RAM, keyboard, Philips colour drive, and interfaces to standard television sets.

In the past two years, IBM bolstered profits considerably by achieving high levels of sales, so the unexpected swing back to rental is likely to impact its figures. The company is now faced with a dilemma: should it cut prices further on the 3030 series to boost outright sales, or will this lead to even more overall demand, pushing delivery dates out even further?

It is this task of being all things to all men, of seeing that simple facilities are provided for some users and very sophisticated ones to others, while keeping the whole thing reasonably coherent, that promises easily to occupy all of Rosner's time for the next three years.

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LETTERS

Success of Honeywell Page Printing System

To: The Editor, Computer Weekly, Dorset House, Stamford Street, London SE1 9LU

IBM and Univac too, we would guess) that makes the Page Printing System very competitive indeed!

JOHN MACDONALD, Director, PPS Marketing, Honeywell, Brentford.

THE EDITOR welcomes letters commenting on subjects published in Computer Weekly, or on original topics. All letters must be accompanied by the writer's name and address, not necessarily for publication.

To us at Honeywell (and to

The NEB cracks the whip

AS majority shareholders, the National Enterprise Board cracked the whip on Monday at an extraordinary shareholders' meeting of Data Recording Instrument and called for the joint venture with CDC for a disc drive plant, to be given approval to go ahead (CW, May 19).

The plan for an £8 million injection of NEB cash to fund the project had been opposed by Grundy of Teddington, which had hounded DRI in the 1950s, because it considered it to be an unsound venture.

The NEB now has approval for the deal, but Grundy's move to block it has still to be heard by the Appeal Court and the date of that hearing has yet to be set.

ICL for Linesman

SOFTWARE support and bureau services for RAF West Drayton's Linesman computer system, which monitors air traffic conditions in UK air space, are to be provided by a recently installed ICL 2950.

OFF THE SHELF...

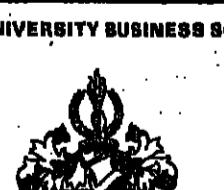
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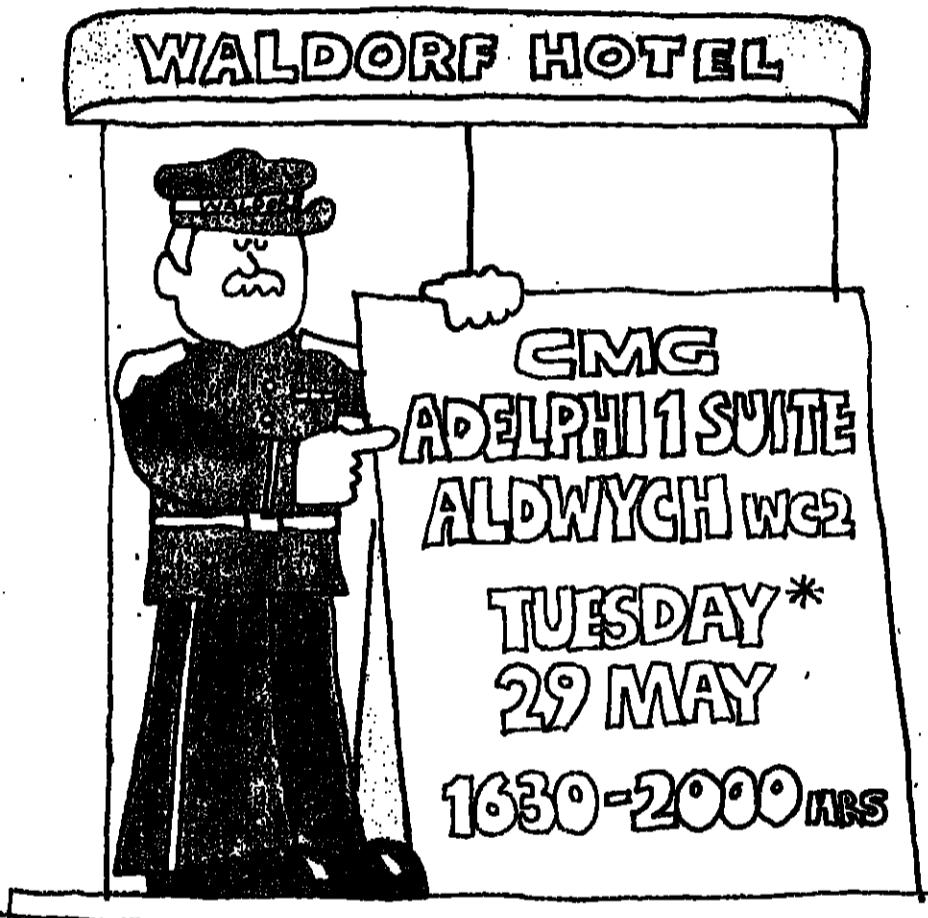
Ideally candidates should have a successful background in hardware sales although applications from candidates with proven sales experience in software products or computer services will also be considered.

A substantial basic salary is offered plus generous commission and a company car scheme. Successful candidates will receive full training in the Company's products and have the opportunity of realistically achieving earnings well in excess of £13,000 in their first year of operation with ample scope to earn £20,000 per annum and more.

Ref. E2/2405

MYRIAD APPOINTMENTS LIMITED
30 Fleet Street, London EC4Y 1AA
01-353 0981

Analysts/ Programmers— who are Computer Professionals Come and meet us at the Waldorf Hotel...



...find out for yourself whether working for CMG will suit you!

£5000-£13000

Salaries range from £5000-£13000 as we have a wide range of requirements.

A minimum of 2 years commercial systems and programming experience is required. At the top end of the scale we are looking for consultancy and management experience as well.

- The work is challenging
- Programming through to Consultancy
- Minis and Mainframes
- A variety of applications and customers.

As all promotions are made from within the company your career will progress in line with your ability.

In addition to the high salaries CMG provides an exceptional package of additional benefits:

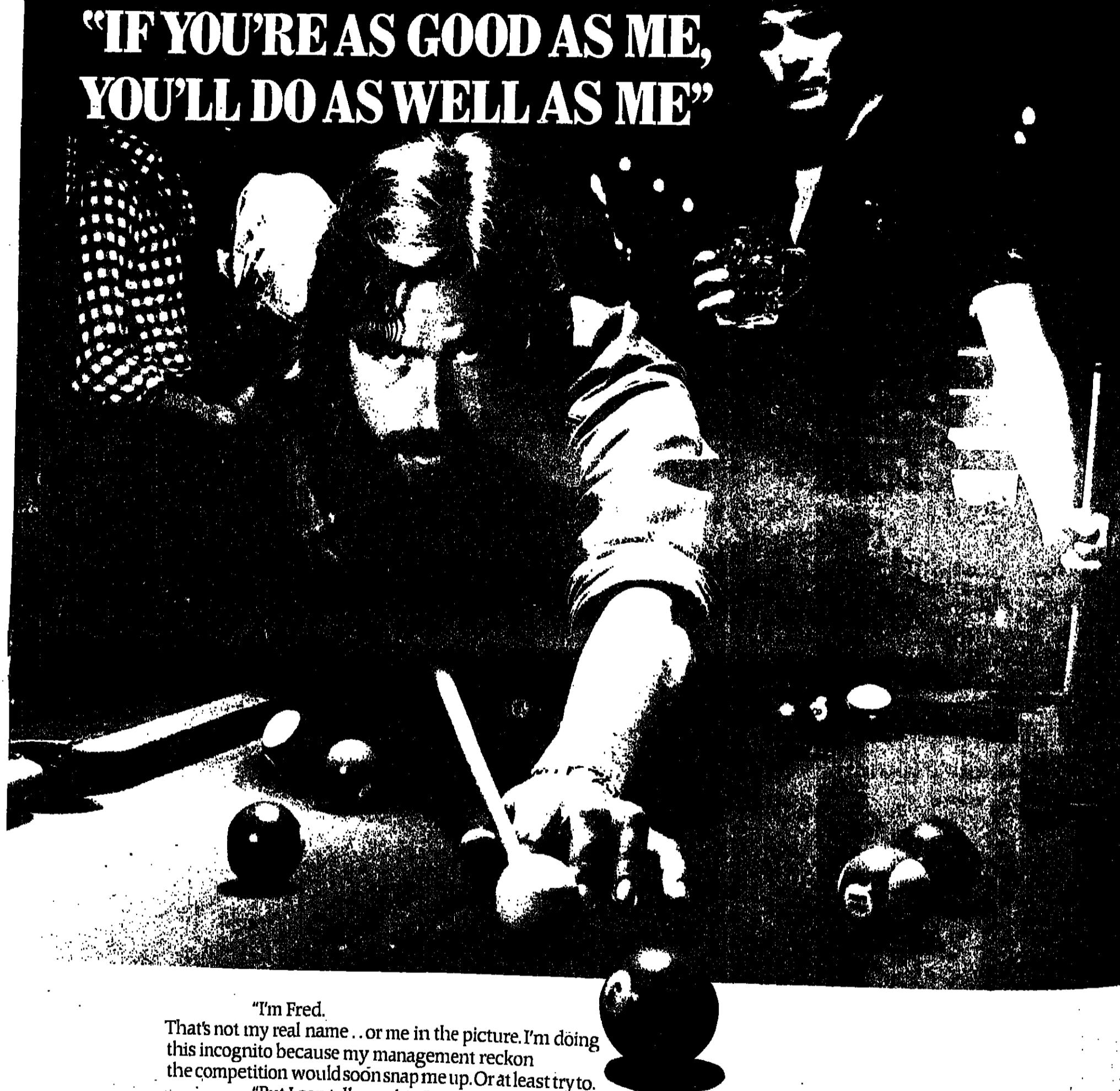
- Free Life Assurance and Pension Plan
- BUPA Family Cover
- 21-26 days annual holiday
- Profit Sharing
- Assistance with relocation expenses.
- Holiday commitments honoured

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 Computing
Services
Association
Member of the Computing Services Association

Field Service Engineers...
"IF YOU'RE AS GOOD AS ME,
YOU'LL DO AS WELL AS ME"



"I'm Fred.
That's not my real name... or me in the picture. I'm doing
this incognito because my management reckon
the competition would soon snap me up. Or at least try to."

"But I can tell you this. I joined Data General as a Field Service
Engineer only two years ago. Already, like 50% of the team who joined at the same time,
I've had substantial promotion. I came into management. Others went into support.
The company's growing that fast!"

"If you reckon you're good, come and join me. All you need is the experience
or the potential to trouble-shoot to systems, unit or component level. It's tough work, but worth it."

"You'll be joining one of the world's foremost computer companies and working on
state-of-the-art equipment. Personally I reckon their systems are second to none."

"Pot the black and win the game. Men or women phone Tony Peacock our UK Field
Service Manager on 01-841 5151... or write to David Daley, Personnel Manager at the address below."

"Data General is where the action is. And it's good!"

Data General Ltd,
3rd & 4th Floors, Hounslow House, 724-734 London Road,
Hounslow, Middlesex TW3 1PD.

Data General

If you're as good as me,
Come and join me! Fred

Operations.

Location: Rural West Yorkshire.

A chance to join progressive Computer Service Bureau.

Established as one of the leading Computer Service Bureaux in the North West, and a member of a prominent financial group, our client provides a comprehensive data processing service to their parent group of companies and a wide range of external users.

Their continued growth has created the following vacancies in the Computer Operations department where facilities include Univac 1106 and Univac 1108 hardware with extensive communications network.

Operators.

Team Leader and Senior Operator level.

Salary up to £5000 p.a. + 20% shift allowance.

We are looking for experienced operators with the ability to hold responsible positions in the team. If your experience includes Univac 1100 then so much better, but we would also like to talk to you if you have either an IBM or Burroughs background - Either way, you should have worked in a Real-Time/On-line environment. Ref. MB/2471.

Operations Support.

Salary up to £6000 p.a. basic

(could be days only or shift work - whichever you prefer).

These positions will appeal to Operators who want to broaden their scope; programming or systems people who want to apply their experience in a completely new area; and those of you with previous or current experience in a similar role who feel like a challenge.

You will be directly involved in all aspects of support, including systems implementation, problem solving, performance monitoring and evaluation. Ref. MB/2479.

Based in extremely pleasant rural surroundings, the company offers excellent working conditions, 4 weeks holidays, regular reviews, formal training and a generous relocation package.

For further information and immediate action, please contact Marilyn Black on 01-828 2115 or 01-828 5356 (24 hour answering service).

John Goldsmith Computer Professionals



John Goldsmith (Computer Recruitment) Ltd.,
15 Buckingham Palace Road, London SW1.
Telephone: 01-828 0556 - 24 hour answering service.
Telex: 918779
Recruitment Consultants
A Company of the Provident Financial Group

MINI COMPUTER MANAGER

Salary £8000 c. Plus car

A substantial marketing orientated company, based in Essex is seeking a first class computer professional to develop, manage and implement substantial changes to its computing facilities.
The brief will involve choosing a new computer and creating a small team of specialists to develop and implement new systems for the 1980s.
The right candidate (male/female) will need a creative and hard working mind.
Please respond in writing to the Managing Director, H. O. Marshall, Nor Systems Limited, Valley Road, Harwich, Essex CO12 4RH.



**COBOL
PROGRAMMERS**
London & S.E. England
Salaries £17,000
call
MACROLOGIC
(recruitment consultants)
01-278 5634

IBM OS COBOL
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\$20K-£30K
Ring Joanne Stone
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Eves/Weekends

We've made things easy for you!

If you're chasing a new job or a new contract, save time by filling in your application form here and now.

Personal Please write in ballpoint, using block capitals.

Surname _____ Forenames _____
Address _____

Tel. Home _____ Office (discretion will be used) _____

Age _____ Place of Birth _____ Car? _____

Are you prepared to relocate? _____ UK/Abroad (delete) _____

Experience Place no. of yrs. in bpx, e.g. IBM 360/370 ... 4

Machines: Please specify model. **Applications**
IBM 360/370 _____ Commercial _____
IBM others (specify) _____ Financial _____
ICL 1900/2900 _____ Payroll _____
ICL others (specify) _____ Production control _____
Honeywell _____ Stock control _____
Univac _____ Scientific _____
Burroughs _____ Realtime _____
PDP _____ Software _____
Other mainframes (specify) _____ Database _____
Other mini-computers (specify) _____ Message switching _____
Data transmission _____ Communications _____
Central process. _____ Teleprocessing _____
Teleprocessing MIS/CPA/PERT _____
Magnetic tape _____
Disk _____
Others (specify) _____

Languages
Cobol _____
Plan _____
Assembler _____
PL/I _____
Fortran _____
Filetab _____
RPC11 _____
Auto*/easy*/user code* _____
Others (specify) _____

Job Titles
Project leader _____
Systems analyst _____
Systems engineer _____
Analyst/programmer _____
Systems programmer _____
Programmer _____
Operations supervisor _____
Operator _____
Consultant _____
Sales representative _____
Others (specify) _____
Delete where applicable.

Position sought Please state briefly the type of appointment you are seeking.

Minimum salary £ _____ Notice required/Date available _____
Signed _____ Date _____

Cut out the whole advertisement and post to the address below.

Knight

Knight Computer Services Limited

Staff Services Division of BOC Dataforce Group and **SA** a member of Computing Services Association.
Knight Computer Services Limited, 14 Old Park Lane, London W1Y 4NL

01-4914706
or when busy 01-439 3411

OPPORTUNITIES IN THE WEST COUNTRY

for
COBOL PROGRAMMERS
Contact:
K.B. Services (Recruitment) Ltd., Libran House, North View,
Whistable Park, Bristol. Tel.: (0223) 23145

23

Field Service Engineers...

"IF YOU'RE AS GOOD AS ME,
YOU'LL DO AS WELL AS ME"



"I'm Fred.

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Team Leader and Senior Operator level.

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CSA
Computing
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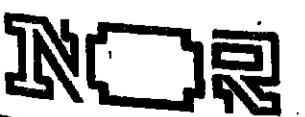
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COBOL PROGRAMMERS

London & S.E. England
Salaries to £17,000

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Data General Data Processing Data Systems

We've made things easy for you!

If you're chasing a new job or a new contract, save time by filling in your application form here and now.

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Machines: Please specify model. Applications

IBM 360/370...	Commercial
IBM others (specify)...	Financial
ICL 1900/2900...	Payroll
ICL others (specify)...	Production control
Honeywell...	Stock control
Univac...	Scientific
Burroughs...	Realtime
PDP...	Software
Other mainframes (specify)...	Database
	Message switching
	Communications
	Data transmission
	Central process
	Teleprocessing
	MIS / CPA / PERT
	Magnetic tape
	Disk
	Others (specify)...

Languages

Cobol...	Commercial
PL/I...	Financial
Fortran...	Payroll
Filetab...	Production control
RPC11...	Stock control
Auto/*/easy/*/user code*...	Scientific
Others (specify)...	Realtime

Job Titles

Project Leader...	Commercial
Systems analyst...	Financial
Systems engineer...	Payroll
Analyst/programmer...	Production control
Systems programmer...	Stock control
Programmer...	Scientific
Operations supervisor...	Realtime
Operator...	Software
Consultant...	Database
Sales representative...	Message switching
Others (specify)...	Communications

Operating Systems

DOS...	Commercial
OS...	Financial
George (specify)...	Payroll
CICS/*/HASP*/GRASP*	Production control
DBOMP*/MVT*/IMS*/CMS*	Stock control
Others (specify)...	Scientific

Delete where applicable

Position sought Please state briefly the type of appointment you are seeking.

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Signed _____ Date _____

Cut out the whole advertisement and post to the address below.

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Knight Computer Services Limited

Staff Services Division of BOC Datacoms Group and a member of Computing Services Association.

Knight Computer Services Limited, 14 Old Park Lane, London W1Y 4NL

01-491 4706
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OPPORTUNITIES IN THE WEST COUNTRY

for

COBOL PROGRAMMERS

Contact:
K.S. Services (Recruitment) Ltd, Libran House, North View,
Westbury Park, Bristol. Tel. (0272) 33145

MYRIAD ANALYST/ PROGRAMMER

S.W. LONDON

c.£5500

This position presents a good career step for an Analyst/Programmer seeking additional responsibility, or a Senior Programmer who wishes to progress towards analysis.

The Company has recently made a major upgrade in machinery with the installation of a dual 3 Mb ICL 2900 VME/B configuration and has a countrywide telecommunications network. The Systems and Programming team work to professional standards and the Company provides formal training to all members of the department.

The successful candidate can look forward to taking total responsibility for a number of interesting applications, involving user contact at all levels.

Applicants should be self-motivated with sound COBOL programming experience, preferably on ICL hardware, and a background in financial and commercial systems.

Benefits include Pension Scheme, Flexitime and 4 weeks holiday.

Ref: E3/2405

MYRIAD APPOINTMENTS LIMITED
30 Fleet Street London EC4Y 1AA
01-353 0981 (24 HOURS)

Junior Commercial Programmer

West Country

An opportunity has arisen within the Plessey Marine Research Unit, Templecombe, Somerset. We are looking for a suitably experienced man or woman to join a small software team involved in a variety of accounting and engineering support projects. You should be self-motivated and keen to develop new skills. Knowledge of FILETAB/FTL6 and GEORGE III would be useful, but familiarity with any high level language would be acceptable. A competitive salary will be negotiated in line with experience and qualifications. Generous assistance will be given with relocation expenses, temporary lodgings and travel. Please telephone or write, giving brief career details, to Stuart Carter, Personnel Manager, Plessey Marine Research Unit, Wilkinthorpe House, Templecombe, Somerset. Tel: Templecombe (09637) 551.

PLESSEY
electronic systems

UNIVERSITY COLLEGE CARDIFF
LECTURER
**COMPUTING
MATHEMATICS**

Applications are invited for the post of Lecturer in the department of Computing Mathematics. Candidates should have a first or good second class honours degree in Computer Science, Mathematics, or a closely related discipline, and be actively engaged in research. Applications will be welcome from candidates whose research interests are in any branch of computing.

Salary £4232 - £8452 p.a. The appointment will be made in the lower end of the scale. Duties to commence 1st October, 1979.

Applications (2 copies), together with the names and addresses of two referees should be forwarded to the Vice Principal (Administration) and Registrar, University College, P.O. Box 218, Cardiff CF1 3XH, from whom further particulars may be obtained. Closing date 21st June, 1979. Reference 1802.

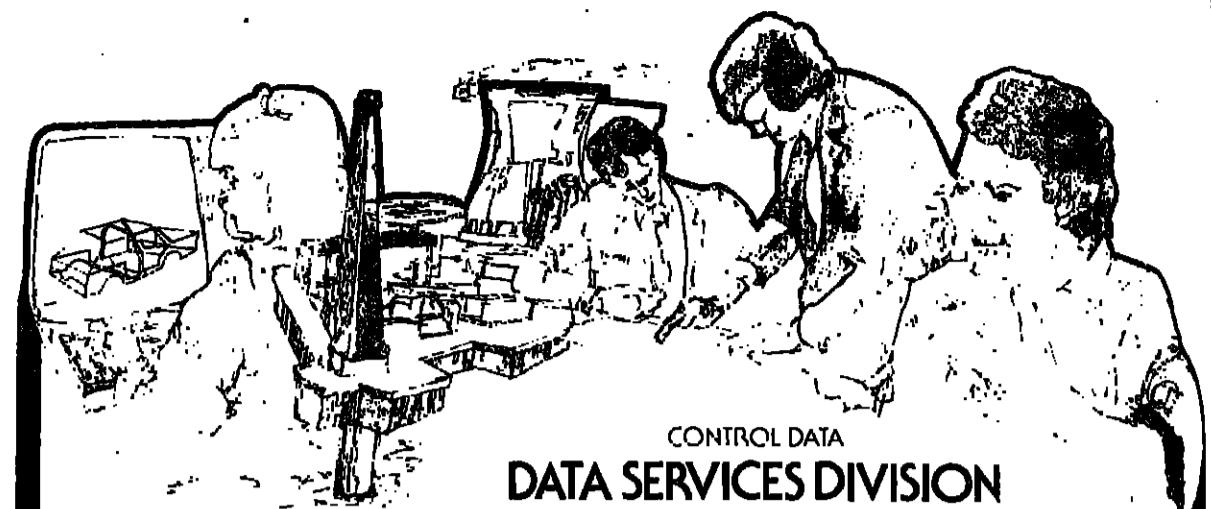
**THE EASTBOURNE WATER-
WORKS COMPANY**
PROGRAMMER

Applications are invited for the above position in a progressive installation using a new Century computer with 96K direct and on-line facilities. Applicants must have Cobol programming experience. Salary will be up to £8,500, depending on age and experience. The job offers an interesting variety of work in a unit undertaking a wide range of applications, and other benefits include a 34½-hour week, up to 4 weeks annual holiday, free life assurance and a contributory pension scheme.

An attractive salary is offered, together with a company car and a full range of benefits. No doubt about it, PPS, plus your own initiative and drive will quickly place you among the elite in the customer engineer market. Vacancies exist throughout the UK.

Please telephone or write to Garick Fraser, Honeywell Information Systems Limited, Honeywell House, Great West Road, Bracknell, Middx Telephone 01-568 9191 ext 382. Ref: EK 2150.

Applications (2 copies), together with the names and addresses of two referees should be forwarded to the Vice Principal (Administration) and Registrar, University College, P.O. Box 218, Cardiff CF1 3XH, from whom further particulars may be obtained. Closing date 21st June, 1979. Reference 1802.



Systems Programmers

MVS Development/IBM 3031

Control Data is one of the world's largest Data Services organisations supplying scientific and commercial DP services through batch, RJE and timesharing on Control Data and IBM machines connected through an international network. As part of our rapid European expansion we are in the process of installing 3 additional mainframes including an IBM 3031 at our UK Data Centre alongside our existing 360/65. The 3031 will run MVS with JES2, TSO, VTAM/NCP, RACF and SPF and will be connected to our extensive US and European Data Centres through Control Data's own network software.

If you are an experienced systems programmer with a minimum of one year's experience under OS or VS operating systems you could help install, maintain and develop these complex new systems.

Whilst this job is located in

North London /South Herts

you would also be working with our development laboratories in California and IBM in order to provide the latest available software in a challenging environment.

A salary of

Circa £8200

is envisaged as well as the usual large company benefits plus exceptional opportunities for career development in a large worldwide organisation dedicated to the computer industry.

For more information call: Marilyn Doff on 01-440 5161.

CDC Data Services/UK, a division of Control Data Ltd., 153 East Barnet Road, East Barnet, Herts, EN4 8RA.

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DATA
MORE THAN A COMPUTER COMPANY

**Computer
Engineers**
First we fly you
to the States
for training
then you take off
with a great
new product

Honeywell

As an experienced Computer Engineer you'll already know about Honeywell's new concept in computer printing PPS... the first total printing system, non-impact, ten times faster than conventional printers.

PPS is a system in its own right. Built around a Honeywell Level 6 minicomputer. Operating off line it can accept output from ICL, IBM, Univac, Burroughs as well as our mainframe computers.

It's the sort of major breakthrough Computer Engineers dream about getting their hands on. We're offering that opportunity to a few selected Computer Engineers. It's the chance to become a Customer Engineer in tandem with our top sales people and be a vital link in the technical presentation of a revolutionary new product - you will have been educated to ONC/HNC or equivalent, with at least three years in minicomputers and an above average electromechanical aptitude. We'll supply you with the specialist technical know-how by sending you to Phoenix on a training course.

An attractive salary is offered, together with a company car and a full range of benefits. No doubt about it, PPS, plus your own initiative and drive will quickly place you among the elite in the customer engineer market. Vacancies exist throughout the UK.

Please telephone or write to Garick Fraser, Honeywell Information Systems Limited, Honeywell House, Great West Road, Bracknell, Middx Telephone 01-568 9191 ext 382. Ref: EK 2150.

JBA

Operating Systems Specialists

Germany

Several of our clients still seek operating systems expertise, preferably with a variety of machines, viz IBM, DEC, UNIVAC, CDC, etc. Work involves the design, program, test and installation of virtual machine operating systems and support software. The ability to design and implement software for an OS/MVS-type operating system is particularly desirable. Programming is in assembler and high level operating systems languages. JBA would like to talk to anyone involved with operating systems, even post-graduates involved in research or similar.

Contact: Mike Creamer

Systems Analyst - Support

Berkshire

We have been retained by a major computer manufacturer to recruit a Systems Analyst to specialise in the support of production and stock control applications. Candidates should have at least five years experience in the design development of systems in a manufacturing environment and be fully conversant with the implementation of shop floor data collection and control. A background as a production engineer (or similar) would be considered an advantage. Ability to understand user problems is essential.

Salary is negotiable according to experience

Contact: Jim Baker

c. £8,000

Prestel/Viewdata Specialists

Germany

Immediate vacancies exist for consultants who have considerable experience of information transmission systems, such as Prestel, Viewdata, etc. Data communications expertise and database knowledge is vital to the positions, particularly where concerned with large mainframes and front-end processors. A user contact background is desirable.

Our client is one of the largest consultancy organisations in the world with over 3,000 employees. On this solid foundation, the company offer real up-market remuneration packages and excellent relocation assistance. Further, the prospects of continuation of projects at very senior levels in a worldwide market place is virtually second to none.

Contact: Mike Creamer

Education Consultant

London based

Start c. £8,000 + Car
A background in education and training is NOT essential for this position, although an interest in these areas of d.p. is naturally assumed.

Pre-requisites are maturity, sound all-round computing experience (both technical and commercial), and the ability to deal with and advise managers and technicians at all levels.

Our client is the market leader in Video Assisted Instruction, a method used by over 200 U.K. customers for their D.P. and Management training. The appointee will be responsible for clients in the South of England, providing advice and support and helping to develop their training programmes.

The rapid expansion of the training field in computing, together with the astounding growth of this company both ensure excellent career prospects for an ambitious individual.

Contact: Andy Wright

Programmers & Analysts (INSURANCE COMPANY)

Hampshire

up to £7,900 + mortgage subsidy + benefits
One of the most prestigious insurance services companies in the UK with an impressive 40% growth factor last year, are recruiting additional staff for development work. Many systems are under way including installation of a DMS 2 database and a large real-time terminal network. Completion of these projects opens the way for a considerable number of additional systems thus ensuring creative work for the future. Programmers must have at least 18 months COBOL experience in a batch or real-time environment. Analysts should have real-time commercial or accounting applications experience preferably at a Senior project level.

First class location, outstanding employment package and a realistic career growth. Call for more details.

Contact: Mike Creamer

c. £1-5,000

Grads. - Micro S/W Development

Oxfordshire

A small, highly talented software development team is to be established in the Oxford area in the very near future and opportunities will be available for two or three Computer Science Graduates, preferably graduating this year with either a 1st or 2nd class honours degree.

The company specialises in producing operating software and compilers for micros, so successful appointees will be right at the forefront of technology. An outstanding opportunity.

Contact: Andy Wright

For further information on any of the above vacancies, please contact the appropriate consultant. If your qualifications do not match the above positions but you are seeking other opportunities please contact us anyway.

JAMES BAKER ASSOCIATES, International Personnel Consultants,
16 Maddox Street, London W.1. Tel: 01-491 4478

WESTERN GERMANY

A.G.U., a medium-sized and expanding organisation which undertakes systems analysis and programming services for major German companies, has vacancies for

APPLICATIONS PROGRAMMERS

who have at least 5 years' programming experience and a working knowledge of a sophisticated operating system. Applicants should be ready to acquire a basic knowledge of the German language.

The successful candidate will receive a salary of £14,000 per annum (plus travel expenses).

Please write with full details of your qualifications and experiences to Dr. Hannes Hopmann

A.G.U. Arbeitsgruppe für Unternehmensberatung eG
Emanuel-Lautze-Str. 17, D-4000 Düsseldorf 11

Application forms may be obtained from The Registrar, The University, P.O. Box 147, Liverpool L69 3BX to whom they should be returned as soon as possible. Quo ref. RV/597/CW.

We are one of the fastest growing computer service bureaux in the country with a proven record of success and planned growth. Due to our continued expansion we are now looking for a Senior Customer Support Executive.

The main work load will involve giving technical guidance and advice, processing work via direct computer terminals and assisting in the future development of our bureau services.

Applicants should have a thorough programming knowledge that has been gained through experience on large ICL 1900 or 2900 equipment. Experience of the

ICL PERT or PROSPER packages would be an advantage.

There are ample opportunities for advancement particularly into the sales area where the earning potential is almost unlimited.

An excellent commencing salary will be paid together with an attractive range of fringe benefits to the successful candidates.

We are growing fast — have you the

energy and skill to grow with us — if you

have then we will be delighted to hear

from you, so write or phone for an application form to: PAT RABY.

Applications are invited for a Lecturer in Mathematics (Computing Mathematics) in the Department of Mathematics. Applicants will be expected to hold a good honours degree in Mathematics, Computing Science and have at least three years' relevant post-graduate experience. Some teaching experience would be an advantage.

Applicants should have an active Research Interest in one or more of the following: Computer Assisted Design/Computer Graphics, Computer Vision, Computer Graphics, Microprocessors, Operational Research or Optimization.

The person appointed will be expected to teach a range of courses and research.

Salary will be within the range £4322-£4842 per annum (£4322-£4992 for part-time).

Qualifications and experience

Further particulars about the post may be obtained from the Academic Registrar, The University, Gurney Row, Bristol, BS8 1JW, or telephone 011-738 2811, ext 4182.

Applications from men and women interested in the post should be sent with the names and addresses of two referees, should be sent in the above

order to the above

date.

For further details contact the Academic Registrar, The University, Gurney Row, Bristol, BS8 1JW, or telephone 011-738 2811, ext 4182.

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For further details

Executive Selection Consultant

London

Remuneration to c. £10,000

This appointment will be of interest to management services professionals wishing to move into a new and highly rewarding career in data processing executive selection consultancy.

BIS Applied Systems Ltd is a major international management and data processing consultancy organisation and a member of the British owned Business Intelligence Services group of companies with a turnover approaching £7m. The Executive Selection Division, a recognised market leader in the selection and placement of management services and data processing professionals wishes to appoint a suitably experienced DP professional able to make a significant contribution to the long term growth of the business and its administration.

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You are experienced in communicating with management at all levels, and knowledgeable of the problems of controlling the development of data processing from the user and the DP viewpoints. You should possess the abilities to evaluate individual performance, motivation and potential against specific requirements, and to present your views clearly and concisely, in oral and written communication at high level. The successful applicant will be offered a remuneration package to around £10,000, and the opportunity to establish a rewarding and satisfying career path in an expanding organisation which is geared to promoting on merit, ability and personal contribution. A range of benefits includes a company car scheme. In addition, opportunities will be provided to work on consultancy assignments in the management consultancy division in order to maintain up to date DP industry knowledge.

Please write briefly and in complete confidence to ANTHONY SPURR, Executive Selection Division, requesting a Personal and Professional History form, quoting reference G726, at the address below. Applications from either sex.

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Applications (two copies), including a curriculum vitae and the names and addresses of two referees, should reach the Registrar (AO/74/CW), University of Essex, Wivenhoe Park, Colchester CO4 3SQ, from whom further particulars may be obtained, by June 7, 1979.

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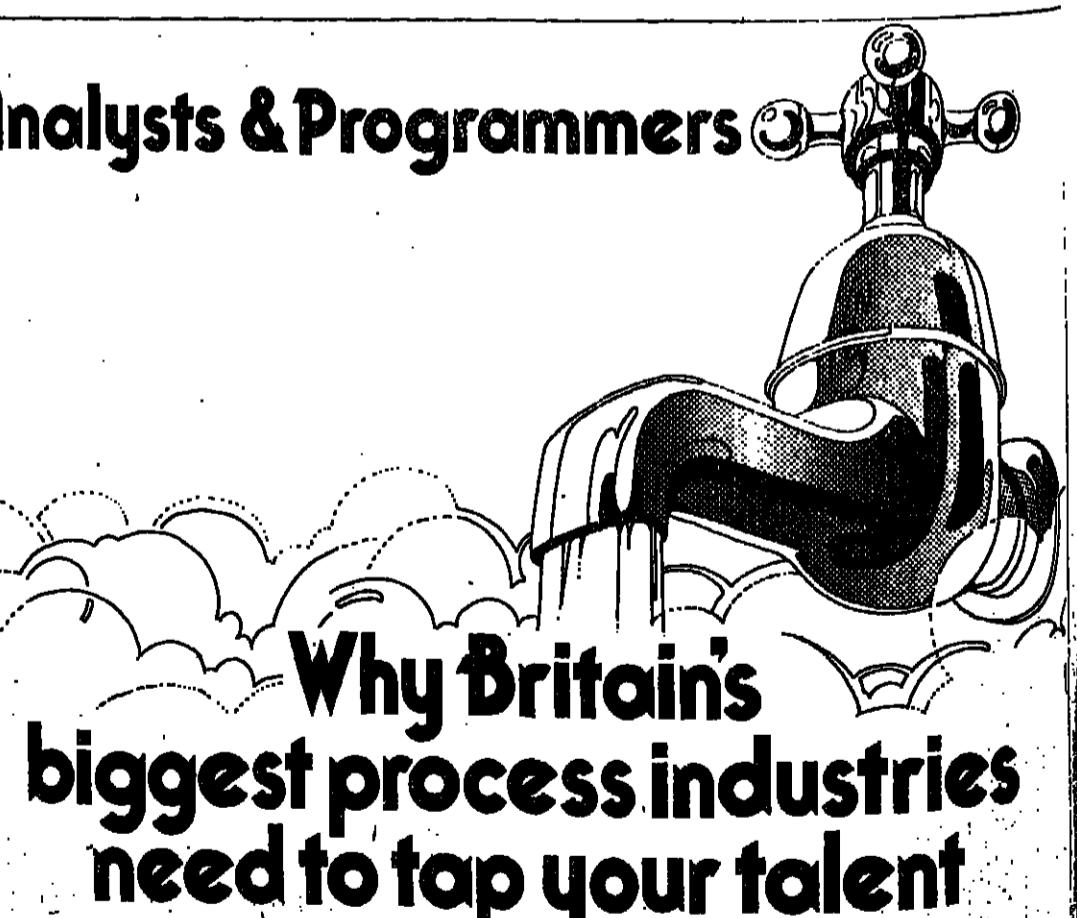
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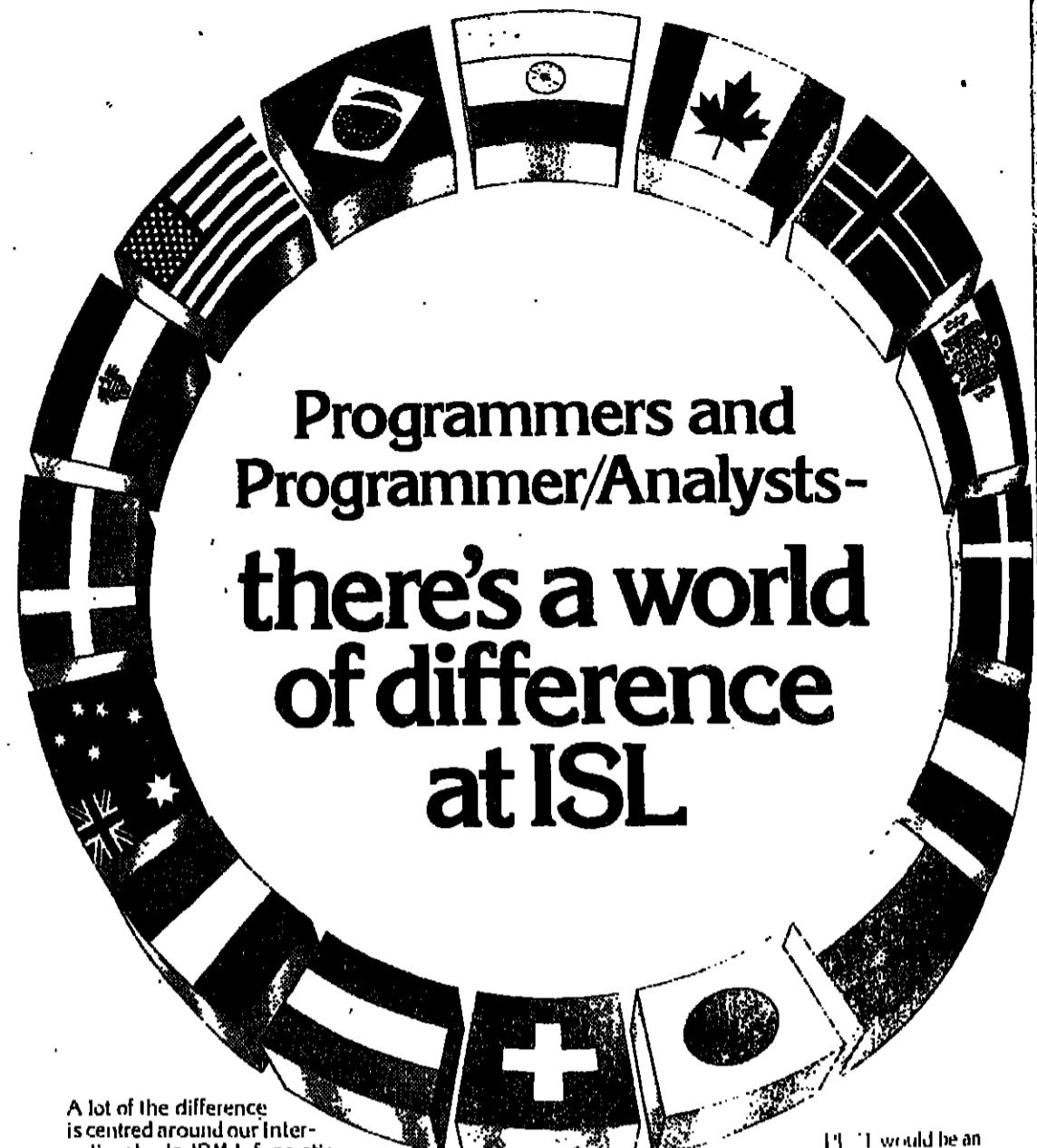
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REF: 2172

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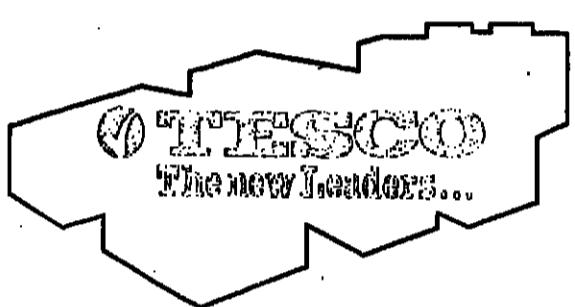
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Please send a CV, or a letter listing professional career history to date including hardware and software exposure, current employer, position and salary, or telephone for an application form, in complete confidence, to ANTHONY SPURR, Executive Selection Division, at the address below, quoting G729. Applications from either sex.

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York House, 199 Westminster Bridge Road
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Telephone 01 633 0866



Scientific Programmers

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Please apply in writing with details of age, experience, qualifications and current salary to: B. Ashcroft, Personnel Officer, Racial-Redic Limited, Newtown, Tewkesbury, Glos. GL20 8HE or telephone Tewkesbury 294161

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To assist with the development and implementation of commercial applications the systems analysts will possess a good academic background coupled with four years or more data processing experience, including formal training in systems analysis and design.

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Persons joining the company now will be required to stay for a minimum of two years, after which it is hoped they will continue to enjoy the high standard of living offered by our client in Amsterdam.

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Applicants should have at least a six year association with data processing where experience has been gained in managing a significant number of Programmers and technical staff.

Hardware comprises IBM 370, 3033 and DEC PDP/11 computers and software currently in use is PL/I, IMS DB/DC, MACRO 11, CORAL, RTL 2 and RSX 11 M and therefore experience of this nature would be a distinct advantage.

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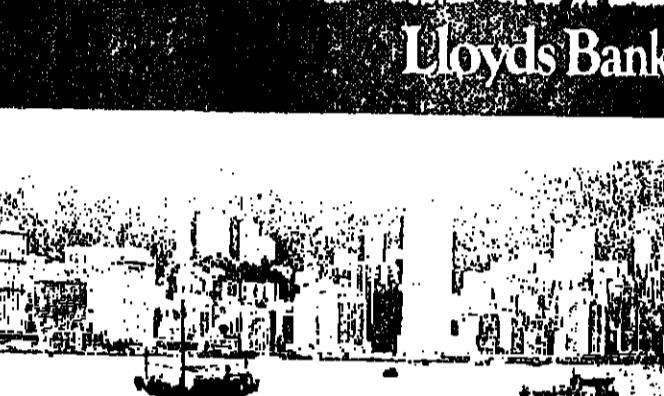
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Computer Publications Ltd requires a journalist/editor to write and edit Asian Computer Monthly and Asian Computer Yearbook and to write for China Computer Monthly, which circulates in the People's Republic of China.

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INSAC



The International Viewdata Centre

The focal point for worldwide exploitation of Prestel and Viewdata systems. The Centre, established by INSAC, is based at INSAC in London and at Systems Designers Limited in Surrey.



INSAC INTERNATIONAL LIMITED

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INSAC will provide a complete marketing, information, training, exhibition and product specification capability, based in Central London.

SYSTEMS DESIGNERS LIMITED

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Britain leads the world in Viewdata Systems! Can you exploit this lead internationally?

INSAC needs

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Write to or telephone Christopher Singer, Operations Director, INSAC International Limited, 17 Lincoln's Inn Fields, LONDON WC2, Telephone 01-831 7536

Systems Designers Limited is an independent British systems house backed by the NEB with an unrivalled reputation in real-time mini and micro computer applications. Established in 1968, it is part of the Systems Designers International Group and employs over 200 professional staff.

Write to or telephone Bill Hockey, Operations Director, Systems Designers Limited, 1 Pembridge Broadway, Camberley, Surrey GU15 3XH, Telephone 0276 62244

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Analyst/Programmers are required to play leading roles in software development, from initial specification of facilities through to final documentation.

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Informal Interviews

Queen's Hotel, Promenade, Cheltenham, May 29th. The Heathrow Hotel, Conference Centre, Bath Road, Hounslow, May 30th.

The Grand Hotel, Ayton Street, Manchester, May 31st. We'll be holding informal interviews for men and women at the above locations between 5pm and 9pm on the dates shown, so why not come along and have a chat and a drink and find out more about a place in the future of communications. Naturally we'll pay all reasonable travelling expenses. Of course, while you're there we'll tell you about our attractive financial rewards which include excellent salaries (up to £9,5K for senior positions), generous relocation expenses etc.

If you can't make any of the dates or require further information please phone Peter Fruin on Malmesbury (06662) 2861, ext. 296 or write to Pye TMC Ltd., Swindon Road, Malmesbury, Wiltshire SN16 9NA.

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For further details and an application form, telephone 01-283 1030, Ext. 257, write to our Staff Records Officer, on 01-283 1030, Ext. 257, or wire to her at: City of London Polytechnic, 117 Houndsditch, London EC3A 7BU. Please quote ref. 70/21.

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For our part we offer you a generous salary and fringe benefits, together with outstanding prospects.

If you think you are the right person to take on this challenge such as this, write to Pat Fowler, Personnel Department, Willis Faber Advisory Services Limited, 10 Trinity Square, London EC2P 3AX or call 01-488 8282 between 10am and 4pm.

Further particulars may be obtained from the Secretary of the Underwriting Department (Room 18), University of Stevenage, Stevenage SG1 2SD, to whom applications (2 copies) should be addressed. Applications, should be lodged on or before 25th June, 1979.

In reply, please quote Ref. No. 4424/

17

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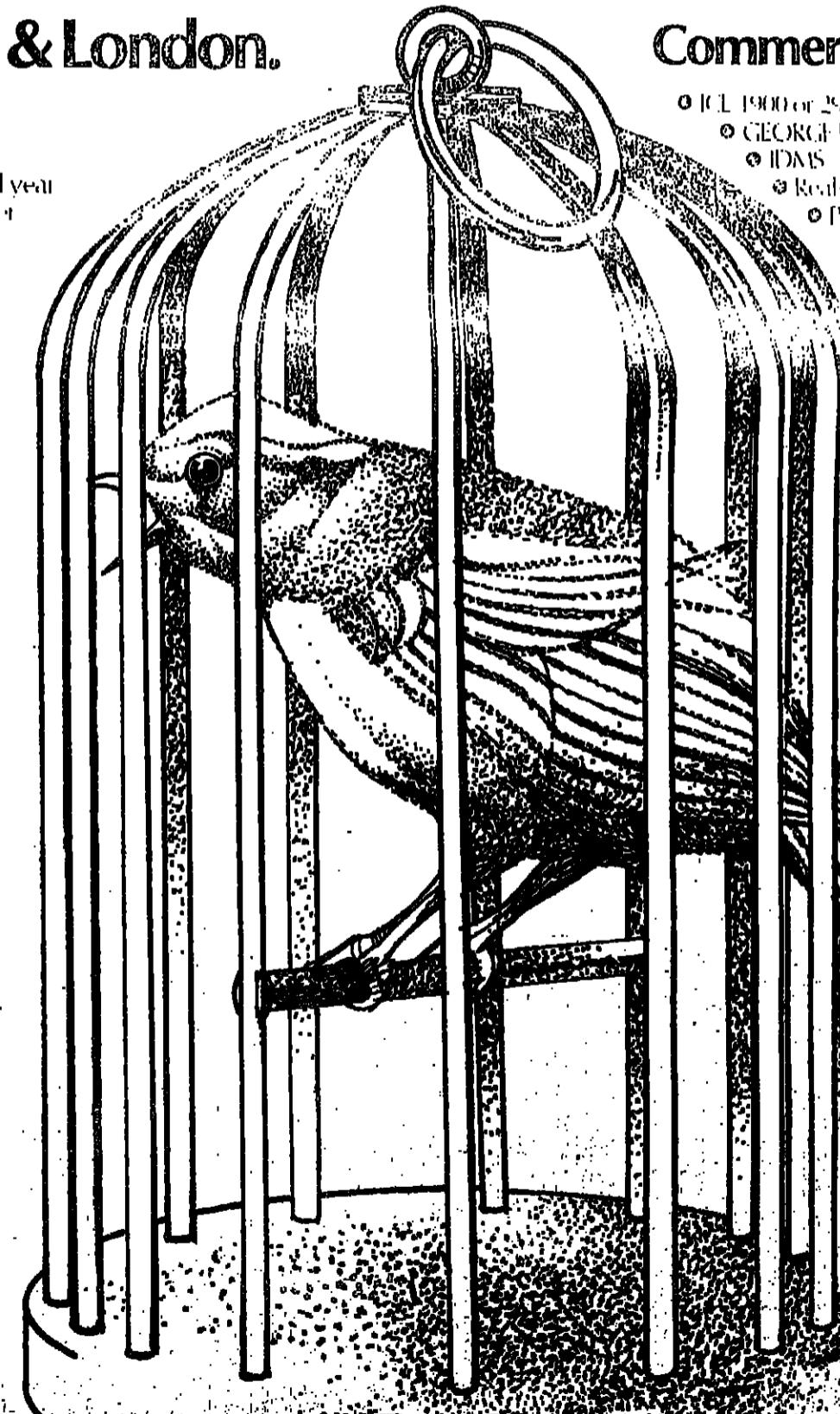
2900 Training A feature of our development plan is the introduction of a world-wide systems network based on an impressive range of hardware from ICL minis, such as System Ten and the 1500 series, through to very large 2900s. We operate a training plan which will enable you to transfer from 1900 to 2900 easily.

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Preferred area of work/location, please tick:

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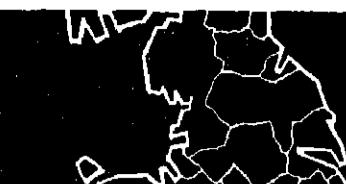
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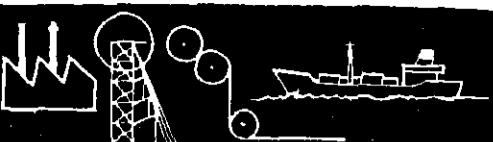
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NORTHERN APPOINTMENTS



THE job market in the North of England continues to be buoyant, and is likely to become even more so as the North-west in particular is set to benefit well from the microelectronics industry.

Microelectronics will provide a net increase of at least one million jobs in Britain, France, West Germany and the US by the late 1980s. The major share of this, something like 80%, will go to the US, as they have responded quickly to this challenge. Britain's share of the rest will depend on how quickly we can respond to the challenge.

This conservative forecast comes from a two-year £1 million study by the well-known management consultants Arthur D. Little. The UK government was one of the 60 clients who sponsored this study. They only looked at the impact of microprocessors and microelectronics in four main sections which are expected to undergo the greatest change. These are: Cars, consumer goods, business communications and the manufacturing and process industries. All of these industries are well represented in the North of England.

This technology presents an optimistic picture for the future.

As far as technical staff are concerned, there are currently obvious oppor-

What Manchester does today...

By Val Halliwell

tunities in an industry where there is still a shortfall of some 27,000 staff.

Fortunately, the many training courses, including the government TOPS courses and university degree courses are now producing potentially good candidates who, given the right opportunities and continued training will go some way to alleviating the pressures, although despite the recognised shortage of skilled staff the potential trainee will still experience great difficulty in obtaining his first post, as for many years a considerable section of the industry was simply not interested in the problems and expense of training and supervising raw recruits.

Having recruited his staff, it is the DP manager's responsibility to ensure that their commitment to the

work remains as high as it is when they first take up their jobs, i.e. motivation.

Just what motivates the DP team is far from clear. Certainly current salary levels, although improved of late, are seldom the main criterion. Neither are such motivational factors as responsibility, working conditions or job security, which is the main reason we are now seeing previously unheard of long service bonuses being awarded after 18 months' service, cars with the job (even at chief programmer level), mortgage facilities, foreign travel etc (the North West having several international airports). Key points are more likely to include career opportunities, status, job satisfaction and performance.

Generally, though, I feel that the North can and does offer excellent opportunities for personal progression in a variety of areas. Traditionally the North grew up around the manufacturing and engineering industries, having been quick to computerise. It can therefore offer skilled computer staff the whole spectrum of applications ranging from the pure scientific to the sophisticated production and inventory control, in addition to the service areas of banks, insurance etc.

Also, we are now well into the phase of minicomputers, Digital Equipment's PDPs, IBM System 32, 34 etc, reversing the trend somewhat, as usually an existing employee can quickly be trained in RPG II or Basic + and subsequently becomes DPM.

Such installations, which often require support from

tinued expansion, introducing new techniques and facilities expected for the 1980s, thereby presenting heavy demand and exciting challenges to computer development staff.

A little further afield, in Yorkshire, the picture is much the same, where to find heavy requirements in the sectors of user, bureaux and software houses for all levels of experienced staff in Hull, York, Leeds, Halifax, Sheffield and throughout the county.

In Lancashire and Cheshire the trend continues, with demands for experience in online real time systems being predominant.

All this activity is promoting the return to the North of England of young hopefuls who, having become disillusioned with the high cost of living and transportation in the South are quickly able to re-establish themselves in an area where the quality of life is second to none.

Looking around the region generally the indications are of development and progression, as we consider the new towns of Warrington and Skelmersdale alone, in the Liverpool/Merseyside area, where we have a number of major companies moving in from the South, offering experience in European networks, together with companies committed to con-

dides in the area of permanent staff have contributed to this demand; the contract staff themselves being engaged on anything from clearing up backlogs of work, caused by staff shortages, conversions to new machines, to development of new software for manufacturers, all of which requires a high level of competence, responsibility and reliability on the part of the freelance.

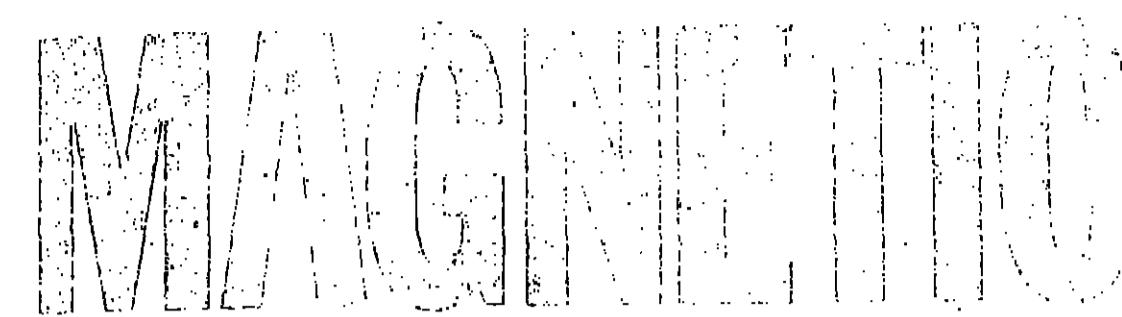
What was the old adage?

What Manchester does today, London does tomorrow.

Difficult employment legislation coupled with the lack of experienced can-

Reference: CW/79030.

NORTHERN APPOINTMENTS



"What Manchester does today, London does tomorrow" runs the old adage. And it is a saying that Val Halliwell, managing director of Victoria Appointments, quotes in this survey of the job market in the North of England. Already buoyant, the market is likely to become even more so as the North-west in particular is set to benefit from the microelectronics industry.

LEEDS/MANCHESTER

Sales Executives **£15,000 + car**

Our clients are well established in the mainframe computer market and in order to achieve their planned increase in market share they wish to recruit additional Sales Executives.

Candidates should have a proven track record in data processing sales and whilst not essential a knowledge of the northern region would be an advantage.

Attractive remuneration packages consisting of a high basic salary plus commission will be negotiated. A company car will be provided.

Reference: CW/79031.

TYNE AND WEAR

Computer Operations Manager **£18,000**

Our client a large industrial organisation based in Tyne and Wear wishes to recruit an experienced Computer Operations Manager.

The installation which will service on a bureau basis the needs of a number of group companies, is currently a 370/148 but due to rapid expansion a 3032 will be delivered in early Autumn.

This is an outstanding opportunity for a mature operations professional and an attractive remuneration package will be negotiated including relocation expenses in appropriate cases.

Reference: CW/79031.

VICTORIA APPOINTMENTS LIMITED FOR THE BEST JOBS IN THE NORTH DON'T DELAY - PHONE V.A. TODAY!

GREATER MANCHESTER

Group Leader (Systems & Programming) **Salary c. £7,000**
2 Programmers **Salary c. £5,000**

The Group Leader, Systems & Programming, will be responsible for developing, implementing and maintaining financial, commercial, batch and ON-LINE control systems based on an IBM 370/138 DCS/VS installation. Duties will also include monitoring, motivating and supervising a team of 3 Systems Analysts and 4 Programmers. The successful candidate will therefore have the necessary 4-5 years' D.P. experience.

The Programmers will have at least 2 years' experience in COBOL programming and will be responsible for writing and testing complex computer programmes.

Our Client offers good terms and conditions of employment, being a market leader in the leisure industry.

Ref: CW01679

HULL

Systems Analyst **Salary up to c. £6,200+**
Analyst / Programmer **Salary up to c. £5,500+**

Our Client, a multi-national company, have embarked on an exciting phase of on-line development with their Univac 80/80 computer, offering a challenging environment for professional staff.

Systems Analyst - An ideal opportunity for a Systems Analyst with at least 2 years' experience in systems coming from a programming background.

Analyst / Programmer - This can be a real career step for a skilled COBOL programmer who has gained some systems experience.

The Company offers good career prospects within a progressive department and of course all the normal benefits commensurate with a large company including training as required, assistance with relocation if needed and excellent sports and social amenities.

Ref: CW02679

NORTH-WEST

Senior Operators **Salary £5,350 + Bonus**

Due to continued development our client now requires a number of Operators with upwards of 3 years' experience gained in a large mainframe environment, e.g. 1 megabyte + to take up these Senior positions.

Our Client offers excellent working conditions and terms of employment including substantial fringe benefits package and a clearly defined career path.

Full relocation expenses are available.

Ref: CW03579

LEEDS

2 Systems Analysts
4 Programmers

Salary up to £6,000

Salary up to £5,500

Our Client, a well-known company in the Retail/Distribution Industry, now wishes to augment their development teams engaged on Industrial/Commercial telecommunications projects on a nationwide network based on a dual Honeywell 68/20 using IDS Database.

They now require 4 Programmers with approximately 2 years' COBOL experience in a batch of real-time environment and 2 Systems Analysts with 2/3 years' experience of commercial systems design.

The Company can offer you excellent career opportunities in a stimulating business environment together with a first-rate remuneration package.

Ref: CW04579

NOTTINGHAM

Senior Programmers
Programmers

Salary up to c. £6,000+

Salary up to c. £5,000+

Our Client, an established systems house supporting a wide variety of exciting DEC mini computer projects, wishes to make the above appointments due to further planned expansion. The successful candidates will have genuine capabilities of general commercial accounting/manufacturing applications, etc, preferably in an ON-LINE/MINI COMPUTER environment, together with sound experience of BASIC and/or COBOL, again preferably on minis.

Owing to applicants with p. experience on mainframe may be considered.

The Company offers excellent opportunities for personal progression together with the security of terms and conditions of employment akin to any large concern.

Ref: CW06578

NORTH-WEST

We are always looking for Professional Freelance Programmers, Analyst/Programmers and Systems Analysts with at least 4 years' sound experience.

We can offer you:-

- Competitive Rates
- Continuity of high quality assignments
- Professional Guidance in all financial matters
- And of course all the other facilities you can expect from an established organisation with a high reputation.

Ref: CW06679

For application form in respect of these and many other vacancies, please contact: Miss Val Halliwell

VICTORIA APPOINTMENTS LIMITED, 24 MOSLEY STREET, MANCHESTER 2, 061-236 7319 (24-hr. Answering Service) and 061-236 7417, Home 061-440 8134

LEEDS

Systems Analysts **to £6,000**

Programmers **to £5,500**

These vacancies require from 2 years commercial systems experience. A programming background would be desirable.

Technical Specialists **to £6,000**

Vacancies for systems programmers and operating systems specialists, particularly with knowledge of GEORGE III.

Reference: CW/79032.

VARIOUS LOCATIONS

Programming

£4,000 - £6,000

Systems Analysis

£5,500 - £7,000

We are engaged by a number of major companies throughout the North who wish to fill vacancies in the above salary ranges. Currently we have opportunities in Merseyside, Lancashire, Yorkshire, Humberside and Tyneside.

Not all of the positions are advertised specifically and therefore we have a continuing need to meet professional staff who are interested in developing their careers.

Why not contact us for an informal and, of course, confidential discussion which can be arranged at a time and location to suit you?

Reference: CW/79033.

Opportunities

Ivor Norton Management Services Ltd
Recruitment Consulting Division

52 Shaftesbury Avenue, London W1V 7DF, 01-734 0862 (24-Hour Answering Service)

10, 8th fl, Capital Tower House, Harrods, London SW1, Tel: 866228

KNIGHT PROGRAMMING SUPPORT LIMITED

MANCHESTER

143/4 ROYAL EXCHANGE BUILDINGS

AS AN ESTABLISHED AND SUCCESSFUL COMPANY OPERATING THROUGHOUT THE NORTH AND MIDLANDS, WE CAN OFFER YOU LONG AND SHORT TERM CONTRACTS WITH EXCELLENT RATES AND FREE FINANCIAL ADVICE CONCERNING TAXATION, MORTGAGES ETC. AS A LARGE AND INTERNATIONAL COMPANY WE CAN ALSO OFFER YOU CONTINUITY OF EMPLOYMENT, OVERSEAS OPPORTUNITIES AND CAREER DEVELOPMENT IN LEARNING NEW TECHNIQUES.

DON'T HESITATE — CALL US NOW.

● RING JUDY LEES/LYNN BARTON ON 061-833 9341.

CURRENT CONTRACTS INCLUDE:

PROGRAMMERS/NORTH

Immediate 12 months contract for Programmers/Designers on GEC 4080 with production control experience. c £220 p.w.

PROGRAMMERS/MIDLANDS

Programmers required to work in a manufacturing environment on PDP 11-plus. equipment using RSTS/E, Basic + 2 and Macro 11. Contracts are 6 month plus. c £230 p.w.

PROGRAMMERS/NORTH & MIDLANDS

IBM 370 COBOL & PL1 programmers required to work on various contracts throughout the North & Midlands. c £220 p.w.

PROGRAMMERS/NORTH & MIDLANDS

Experienced Honeywell programmers with GCOS and COBOL required for various contracts throughout the North and Midlands varying projects. c £220 p.w.

PROGRAMMERS. SRN. PROGRAMMERS/NORTH WEST & MIDLANDS

3 months, 6 months plus contracts for COBOL or assembler programmer on Univac 1100 series. c £220 p.w.

PROGRAMMERS/NORTH WEST

Mark IV programmers required to work for our northern client. Contracts of 3 month plus. c £225 p.w.

PROGRAMMERS/MIDLANDS

Various length of contract for programmers/senior programmers with CICS, PL1, DL1 experience. Under DOS/VS development application. c £230 p.w.

PROGRAMMERS/MIDLANDS & NORTH

ICL 1800 experienced programmers with COBOL, Plan, File Tab and Driver, to work on various projects throughout the North and Midlands. c £220 p.w.

PROGRAMMER/DESIGNERS NORTH

Programmers/Designers required to work on PDP 11 running under RSX 11 using CORAL 66. Process control environment, 12-month contract or less. c Neg. p.w.

SENIOR PROGRAMMER/NORTH

Our Northern client requires, Ferranti 700 experienced programmers for interesting 3 month + contracts. c Neg. p.w.

PROGRAMMERS/MIDLANDS

Our client requires experienced COBOL programmers with IMS (both DB & DC) for development work. Contracts 6 months plus. c £230 p.w.

NORTHERN APPOINTMENTS

THE PERMANENT DIVISION IS A RAPIDLY EXPANDING PART OF KNIGHT PROGRAMMING IN THE NORTH. WE COVER THE UK FROM THE MIDLANDS TO THE SCOTTISH HIGHLANDS. WE OFFER A TWENTY FOUR HOUR SPEEDY AND EFFICIENT SERVICE TO ALL OUR CLIENTS AND APPLICANTS. WHETHER YOU HAVE ONE YEAR OR TEN YEARS IN DP YOU CAN USE OUR EXPERIENCE AND EXPERTISE IN SECURING A NEW POSITION.

TEST OUR SERVICE.

● RING JOAN JOHNSTONE ON 061-833 9341.

CURRENT VACANCIES INCLUDE:

SYSTEMS ANALYST/SCOTLAND

c £6500

Our client requires a systems analyst with Honeywell experience for work connected to North Sea oil developments. Ref. 1148.

SYSTEMS PROGRAMMER/LANCS.

c £7500

IBM and CICS experience are required by our client, an international concern. Ref. 1150.

PROGRAMMERS/LIVERPOOL

To £5500

COBOL programmers are needed to work on IBM hardware in an expanding installation. Ref. 1146.

PROJECT LEADER/MIDLANDS

£6300 +

Increase your seniority, experience necessary for this position includes ICL/COBOL/PLAN. Ref. 1140.

PROGRAMMERS/DERBYSHIRE

To £6000

FORTRAN programmers are required to work on DEC equipment. Pleasant location. Ref. 1123.

SYSTEMS DESIGNERS/LEEDS

£6000 +

Productivity payment and relocation expenses offered, 2900 experience an advantage. Ref. 1075.

SYSTEMS ANALYSTS/THE NORTH

£6500 +

Subsidised mortgage with relocation expenses. Analysts required to work on advanced IBM hardware. Ref. 1136.

PROGRAMMERS/YORKS.

To £5700

Lucrative benefits offered to COBOL programmers with ICL experience. Ref. 1071.

PROGRAMMERS/NORTH MIDLANDS

To £4000

Our client requires COBOL programmers to work on Honeywell equipment. Pleasant environment. Bonus Scheme and relocation expenses. Ref. 114.

NORTHERN APPOINTMENTS

COMPUTER SALES PROFESSIONALS

c£12K to c£14K + Car

SCOTLAND

Finance/Banking Terminals
Mini Computers
Or local Authority Sales Experience
Ring Tim Amatt on 041-552-5366

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Mainframe Sales
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Word Processing
High Speed Printers
Ring Barry Tyldsley on 061-831-7701

YORKSHIRE

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Disc Based Systems
Word Processing
Mini Computers
Ring Barry Tyldsley on 061-831-7701

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High Speed Printers
Disc Based Systems
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All interviews will be held locally

WHAT DO WE HAVE TO OFFER YOU?
WHAT DO YOU COME AND JOIN US?

Tell you that we are to build a fully integrated DATABASE to assist in the management of our MAJOR INTERNATIONAL MANUFACTURING COMPANY.

Tell you that we are to develop virtually all Accounting, Distribution and Manufacturing applications in a totally USER-ORIENTATED environment, using INTERACTIVE REAL-TIME processing via V.D.U.s (many via a Teleprocessing network) into our SYSTEM/38.

Tell you that the System/38 is IBM's NEW GENERATION MACHINE FOR THE 1980s with Megabytes of main memory; thousands of megabytes of disk capacity; single level (virtual) storage; fully integrated Database manager; genuine real-time operating system; and new languages CL & RPG III (both fully procedural languages)?

Tell you that we need SENIOR ANALYST/PROGRAMMERS capable of both carrying MAJOR PROJECTS FROM CONCEPTION TO IMPLEMENTATION and playing a major role in the MANAGEMENT TEAM of this NEW and RAPIDLY EXPANDING installation?

Tell you that we would prefer you to have experience of some of the following: Order Entry; Manufacturing (Accounting and Planning); On-Line interactive systems; RPG II?

Tell you that we are situated amongst beautiful Northumberland COUNTRYSIDE only a few miles from some of the most BEAUTIFUL BEACHES in Britain?

Tell you that we offer normal fringe benefits and are prepared to pay re-location expenses, on top of a salary of about

£7,000?

None of this is any good unless we can get you to read this ad. So all we are going to tell you is that we don't mind whether you are

male or female.

If you are interested in this UNIQUE CAREER OPPORTUNITY (or in a position as a programmer or analyst/programmer), please contact HAZEL MOODIE, who will handle your application on our behalf.

NORTHUMBERIAN COMPUTER MANAGEMENT
THE NORTH EAST'S LEADING RECRUITMENT SPECIALISTS
NORTHGATE HOUSE, 8 ST. MARY'S PLACE EAST
NEWCASTLE UPON TYNE

Telephone: 091-232 2000

VACANCIES IN THE NORTH

WE LIST BELOW A CROSS-SECTION OF THE PERMANENT VACANCIES ON FILE, WHICH CLIENTS OF OURS HAVE RETAINED US TO FILL. THESE REPRESENT ONLY A SMALL PERCENTAGE OF THE VARIOUS POSITIONS CURRENTLY REGISTERED WITH US. FOR MORE INFORMATION REGARDING THESE, OR OTHER POSITIONS, RING SPIRODON NOW!

SENIOR

UP TO £9,000 p.a.

101. PROJECT LEADER

370 — Big Comp. Benefits

102. COMPUTER MGR.

370 — Good benefits

103. SYSTEMS PROG.

370 — OS/VS1

104. PROJECT LEADER

370 — Good Opportunities

SEMI-SENIOR

UP TO £7,000 p.a.

105. TEAM LEADER

Birmingham Software Specialist

To £7,000

106. PRINCIPAL ANALYST

Leeds H/W 66 — Relocation exp.

To £7,000

107. SYSTEMS DESIGNER

M/CR 360 & PDP 11/70

To £7,000

108. SYSTEMS ANALYST/PROJECT LEADER

Staffs 1902T — Commercial

To £7,000

OTHERS

£4,500-£6,000

109. SEN. ANALYST

Midlands 370 — Commercial

To £6,000

110. PROGRAMMER

Liverpool PDP 11 — Basic +

To £6,000

111. SEN. PROG.

Birmingham 370 — OS/COBOL

To £6,000

112. SYSTEMS ANALYST

Liverpool H/W 64/80 — Retail

C. £6,000

113. SYSTEMS ANALYST

M/CR ICL — W/LL train

Senior Programmer

To £6,000

114. PROGRAMMER

Cheshire 370 — OS COBOL

To £6,000

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COMPUTERS IN THE AIR AND
FUTURE AIR

DEVELOPMENTS

**SYSTEMS ANALYSTS
PROGRAMMER
ANALYSTS
SENIOR PROGRAMMERS
PROGRAMMERS**



Fine Arts Developments Ltd, an international company based in Preston has, over the last 10 years, been one of the UK's leading growth companies whose main activities are mail order, manufacture and distribution in the UK and overseas. The company is introducing new hardware including an IBM 3031 with laser printer and distributive processing units (8100s and 3750).

The introduction of new hardware allows new thinking, to take advantage of increased computer facilities.

Project teams will be set up to examine existing systems and coupled with a planned training programme, will provide a first-class platform for people to enhance their personal and technical skills. Suitably qualified applicants should be ambitious with a desire to broaden their knowledge on a new and technically advanced machine.

Attractive starting salaries will be backed by a first class package of benefits, including relocation expenses, awaiting those fortunate to work in this progressive environment.

Telephone us NOW to arrange an immediate interview 061-491 1866.

Computer People North

Recruiting for Clients in N England and Scotland

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Mail this slip. No stamp required.

Address to:

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FREEPOST, CHEADLE, STOCKPORT SK8 2YD.

Name _____ Tel. (work) _____

Address _____ Tel. (home) _____

CW/24/5 Job sought _____

SALES EXECUTIVES

IF YOU HAVE THE EXPERTISE
WE HAVE THE PRODUCTS!
SO YOU CAN EXPECT TO EARN IN THE
FIRST YEAR c£14,000

Yes, not only do we have a complete range of integrated mainframe and mini computers but also a proven range of packages, combined with excellent professional support to free you to get on with the real job of selling.

Realistic quota objectives, excellent technical and management support together with unlimited prospects of career advancement and comprehensive product training will ensure your success. If you are between 25 and 35 years of age, ambitious with a burning desire to succeed in the mainframe or mini computer market place.

CONTACT: SIMON LEVER ON: 021-236 3781 (24-hour answering service) OR: Hagley 4166 (evenings and weekends).

THESE POSITIONS ARE LOCATED THROUGHOUT THE UK

ALL REPLIES WILL BE TREATED IN THE STRICTEST CONFIDENCE



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Birmingham 021-236 3781 35-37 Great Charles Street, Queensway, Birmingham B3 3JY
Manchester 061-833 0427 Blackfriars House, The Parsonage, Manchester M3 2JA

Specialist Computer Recruitment Ltd

NORTHERN APPOINTMENTS

NORTHERN APPOINTMENTS

NORTHEAST & NORTHWEST VACANCIES

LEEDS COBOL PROGRAMMER to £5000
COBOL programmer with at least 2 years commercial experience and a desire to work with on-line development. In a progressive installation would find this position a challenge.

YORK PROGRAMMER PL/1 to £5000
Experienced PL/1 programmer required for a professionally run installation. Indepth commercial experience coupled with a good educational background is required by a well established IBM user.

BASIC AND BASIC + PROGRAMMER to £5000 + Bonus
Experienced BASIC and BASIC + programmers required to join a go-ahead group. Knowledge of PDP's an advantage. Excellent promotion prospect with this dynamic company.

DONCASTER COBOL PROGRAMMER to £6000
Our client seeks an ICL COBOL programmer with not less than 18 months experience in a commercial environment. Able to converse at all levels and assist D.P.M.

LEEDS COBOL PROGRAMMER to £4500
Excellent position available for experienced ICL COBOL programmer. Young go-ahead installation, exciting conditions of employment.

HULL COBOL PROGRAMMERS to £6600
Commercial systems analyst may look forward to an exciting future in systems development with our major client. Good working conditions and attractive earnings.

TEESSIDE PROCESS CONTROL to £7000
A user of real-time computer based process control system seeks additional analysis and programming experienced in CORAL 68, ALGOL or RTL 11. Experience of PDP's an added advantage.

NORTH YORKSHIRE COBOL PROGRAMMER to £7000
PDP's
Our major clients in North Yorks are now seeking further Technical staff with in-depth knowledge of PDP 11-RSX 11 M. Excellent positions in well established organisation.

LEEDS COBOL PROGRAMMER to £5000
COBOL programmer with at least 18 months commercial experience required by our leading client. Opportunity to join a well established professional organisation.

BRADFORD COBOL PROGRAMMER to £5500
Our client seeks an additional programmer to compliment their expansion plan. Exciting new hardware. Your career can grow with the installation grows.

Phone IRENE ROGERS on LEEDS 444185

(daytime) or LEN CRAY on LEEDS 687118 (evenings and weekends) to find out more

about these or any other positions you may be seeking in the North.

Alternatively, write with brief career details (no stamp required) to Lorien Computer Services, FREEPOST, Leeds LS7 3YY.

HULL COBOL PROGRAMMERS to £5600 + Benefits
Highly successful Company offering services to commerce and industry is seeking mature staff with good RPG II experience to cover business expansion. Excellent prospects with this dynamic Company.

NANTWICH CORAL 68 PROGRAMMER to £5700
CORAL 68 programmer is required to work on dual Argus hardware with our client. Exceptional working environment with an innovative company.

Phone STEVE SYKES on LEEDS 444185

(daytime) or on LEEDS 602417 (evenings or weekends), or write with brief details (no stamp required) to Lorien Computer Services, FREE POST, Leeds LS7 3YY.

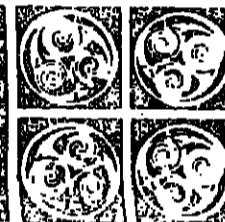
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Recruitment Consultants

OCS House
Savile Road, Leeds LS7 1JN
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*(24 hour Ansaphone service)



A major Group of Manufacturing Companies with a Group Turnover over £180 million are preparing for the development of several major systems in the Manufacturing, Administrative and Management Information areas. They now require additional staff to support an extensive development schedule.

The client is looking for sound commercial experience possibly in a Manufacturing Environment and involvement in at least one major project from feasibility to implementation. Individuals with knowledge of Teleprocessing and Communications would be of particular interest, but the emphasis will be on proven expertise in Business Systems Analysis.

A large Multi-National Group have a requirement for Senior Analysts and Analysts to assist in their development programme.

A configuration enhancement is planned for the near future and the successful applicants will be involved in the associated developments.

A sound commercial background together with an ability to take on new work is required. Experience of Financial Applications and/or production control is desired.

Applicants should be able to demonstrate ability to handle projects from design to implementation.

These positions offer the opportunity for career development along with the latest techniques.

Contact Dennis Hynes, Manchester (061) 236 4693.

**B
C
P**

LEEDS ANALYSTS ANALYST/PROGRAMMERS

★ £5,000-£6,000

PLUS PRODUCTIVITY SCHEME

★ RELOCATION

★ FLEXITIME

NORTH MANCHESTER

SENIOR ANALYST

★ £5,529-£7,049

ANALYST

★ £4,739-£5,977

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A DIVISION OF BERTRAM PERSONNEL GROUP LTD.

Systems Analyst around £6,000

This appointment is with Holset Engineering Company Limited, a successful and expanding £20m turnover concern engaged in the design and manufacture of advanced original equipment for the worldwide automotive, marine and industrial markets. Strong financial and manufacturing systems play an important part in the control and development of the company.

The installation has an IBM 370/138 utilising DOS/VS in a DB/DC environment using CICS and DL/1 — later moving to IBM 8100.

The Systems Analyst, reporting to the DP Manager, will be involved in a local team environment with specialist emphasis on financial systems. The span of involvement is broad, the atmosphere friendly, and the experience should be invaluable. Training will be given as an integral part of the job. The post calls for some experience in financial systems, ideally gained in industry or commerce working in a similar installation. Starting salary is around £6,000, attractive benefits include 33 days' holiday, excellent pension scheme and generous relocation help, where appropriate. Please telephone for an application form or write in sufficient detail to make this unnecessary, to: R. Rawliss, Manager, Personnel Development, Holset Engineering Co. Ltd., Turnbridge, Huddersfield HD1 6RD. Tel: Huddersfield 22244

HOLSET

TYNE AND WEAR TRANSPORT VACANCY

SYSTEMS ANALYST/PROGRAMMER

Salary range £5,736-£6,452

Applications are invited for this newly created post within the Finance Department of this Executive from suitably qualified and experienced persons.

The successful candidate will be responsible to the Administrative Services Officer for advising the Executive in data processing matters and for assisting other Managers in the preparation of feasibility studies of systems under consideration for computerisation.

The duties of the post will include the determination of information requirements; evaluation of existing systems and their suitability for computerisation; the regular review of existing operational systems; supervision of the operation of 7500 Remote Job Entry device, assistance in the selection and training of D.P. staff; liaison with Tyne and Wear County Council D.P. Staff in all matters of mutual interest; and participation in an in-house Steering Group.

The appointee will also play an important role in the development of integrated computerised systems for Metro operations. Conditions of service are those laid down by the Joint Negotiating Committee for Non-Manual Employees of Passenger Transport Executives and appointment is subject to meeting the medical requirements of the Executive's Medical Officer.

Applications stating age, qualifications and the names and addresses of two referees to be addressed to:

Associate Director (Personnel)
Tyne and Wear Transport
Manors
Newcastle upon Tyne NE1 2EL

to arrive no later than Friday, 1st June, 1979

CITY OF SHEFFIELD POLYTECHNIC

Department of Computer Services

SENIOR SYSTEMS PROGRAMMER

Post No 268

APL — £4773-£5073 (including supplement)

Will be responsible for the installation, maintenance and development of systems software on the IBM 370/135 computer and responsible to the Systems Project Leader. Applicants should have previous experience of IBM Assembler language programming, the IBM OS/VS1 operating system and of IBM equipment.

Requests for an application form in writing only please to the Recruitment Section of the Personnel Department, Sheffield City Polytechnic, Halliford House, Finsbury Square, Sheffield S1 2BB. Completed forms should be returned by 8th June.

THE UNIVERSITY OF LEEDS SYSTEMS ANALYST

Salary up to £7148

A systems analyst is required to join a small team of analysts and programmers in the Management Computer Unit, whose responsibility will be for line systems to be implemented after delivery of an ICL 2053/50, and which is currently maintaining an increasing range of batch systems on an ICL 1801.

Further details can be obtained from Mr. M. M. Smith, Senior Assistant Registrar (User Planning Services), The University of Leeds, Leeds LS2 9JT.

Written application should be sent to the Registrar, The University of Leeds, LS2 9JT quoting reference number 11/18, by no later than 1st June, 1979.

ANALYSTS

To £6.5k LEEDS

The Burton Group is best known for its mens and ladieswear retail chains. The Credit Systems Team — which is part of the Management Services Division — provides the full systems requirement for the Group's Credit Company — Readycredit Ltd. Readycredit is already a market leader in the fast expanding credit card business but is well placed — and ambitious — to develop and diversify its activities.

In fact, expansion is rapidly becoming the keyword of the Burton Group for, as well as having a wide range of challenging projects to work on, the successful applicants will be supported by new hardware which is currently being installed — twin 2960s which will operate under DME with MOPS and VDUs.

We are looking for: —

1 SENIOR ANALYST — who should have several years of relevant commercial experience.

1 ANALYST — who could be fairly new to Systems but with a sound Programming background.

In addition to an attractive salary structure, we offer a competitive total remuneration package. Annual review date is September 1st and the bonus a substantial one — for a job well done. The package also involves paid overtime, retail discounts and if appropriate, full relocation expenses.

Telephone Tim Mackereth on Leeds (0532) 36373, Ext 538, or write to him at the Burton Group Limited, Hudson Road, Leeds, LS9 7DN, West Yorkshire.

BURTON

NORTHERN REGIONAL HEALTH AUTHORITY

SENIOR SYSTEMS DESIGNER (SCALE 14)

Applications are invited for the post of Senior Systems Designer in the Regional Statistical and Operational Research Section. This is a senior post in a team of three which is concerned both with providing computing support for the work of the section and undertaking specific project works.

An ICL 2960 operating under DME will shortly become operational.

Applicants should preferably be of graduate or equivalent status in a numerate science with demonstrable statistical and/or computing experience.

Salary scale £5637-£6715 p.a. (increase pending). New entrants to the NHS will normally commence on the minimum point.

Potential applicants who wish to discuss the post can do so if desired with Mr. R. A. McNay, The Regional Statistician, on (0632)-654188, Ext. 3195.

Application form and job description available from the Regional Personnel Officer, Northern Regional Health Authority, Benfield Road, Wallgate, Newcastle-upon-Tyne NE6 4PY.

Closing date 11th June, 1979.



DYFED
County Council

Applications are invited for the following post:

COUNTY TREASURER'S DEPARTMENT SENIOR COMPUTER PROGRAMMER

Grade APL £4773-£5073 inclusive of supplement

For this post should have appropriate training and experience.

A proven record of achievement as a COBOL programmer is essential; a working knowledge of another language and of the George 3 Operating System will be an advantage.

The Council has an ICL 1804 computer with communications links to its District Councils and to various schools.

Applications, returning by 31st May, 1979, are available on receipt of a stamped addressed envelope to the Director of Personnel and Management Services, County Hall, Carmarthen.

CVs and applications will be accepted.

Further details can be obtained from Mr. M. M. Smith, Senior Assistant Registrar (User Planning Services), The University of Leeds, LS2 9JT, quoting reference number 11/18.

Written application should be sent to the Registrar, The University of Leeds, LS2 9JT, quoting reference number 11/18, by no later than 1st June, 1979.

NORTHERN APPOINTMENTS

BASIC RSTS OPPORTUNITY

SYSTIME is the most successful British company in the field of mini computer based business systems. Our remarkable success in the last six years has been achieved using two important elements. One, a top range of products supported by first class back-up facilities and Two, by employing the most experienced and ambitious people in the business.

The inherent enthusiasm and team spirit within the company has enabled us to develop a highly efficient and profitable organisation in which individual talent and drive can earn just rewards.

Opportunities exist in:

LEEDS for SOFTWARE CONSULTANTS ANALYSTS/PROGRAMMERS PROGRAMMERS

To join a small team of enthusiasts, responsible for the design and implementation of new Software packages for commercial systems.

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£4000-
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depending on experience

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The work is interesting and varied and the successful applicant will become a member of a lively, young Project Team involved in all aspects of programming and accounting procedures and developing new programmes and systems.

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In future each division will be responsible for its own computer system development, including programming, and managers are now being sought to lead these divisional teams.

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We require a COBOL Programmer to join a small team of Analysts and Programmers working on the development, implementation and maintenance of commercial-type applications including financial accounting, job costing, management reporting, personnel and staff records, and on-line file enquiries and updates.

Starting salary according to qualifications and experience. Letters of application stating age, experience, qualifications and present salary, should be sent to the Registrar, University of Salford, Salford M6 4WT, by June 1979, quoting reference A/631.

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Computer Laboratory - Computer Office Posts Applications are invited from graduates or professionally qualified persons for two posts in the University's Computer Laboratory which operates a large computer system running under the GEORGE 3 operating system. One post will be required for the Software Team and four are required for the Application project teams. Commencing salary will be dependent upon experience and ability, generally as follows:

- a) 6 month programming experience £3200 p.a.
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Applications in writing to: Mr. I. S. Graham, Technical Officer, Department of Administration, Room 202, Civic Hall, Leeds LS1 1UR. Closing date: 4th June, 1979.

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For CLERICAL, COMPUTER OFFICERS and ANALYSTS with experience and knowledge of the GEORGE 3 operating system would be an advantage. Salary up to £4232 or £7145 p.a. Application forms and further details may be obtained from the Personnel Officer, University of Bradford, Bradford BD9 4JL.

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Computers in manufacturing have really come of age in Ford - and at a time when they're still in their infancy in many other companies.

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For further details please contact Miss D. B. Moore, Personnel Officer on 450 6681, or write to: Campari International Limited, Campari House, Priestley Way, Staples Corner, London NW22 7AZ.

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This vacancy will suit an experienced Analyst/Programmer who possesses leadership qualities which he/she would now like to put to the test. Alternatively, an experienced Manager who would like to move on to one of the most pleasant parts of the South Coast - relocation expenses will be paid.

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LECTURER GRADE I
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Applications are invited from suitably qualified candidates for the above post. The lectures start in September 1979. The lecturer will be required to teach Mathematics to O' level and TEC in Engineering courses, together with Computer Studies and Guidance 747 Certificates. Recent experience in the field of computing is desirable.

Salary scale: £3,192-£8,334 plus £189 per annum.

Application forms and further details obtainable from the Principal.

REDIFON
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A software company wishes to compile a list of currently active freelance programmers in Southern England.

Reply in confidence to: Box 1022, Computer Weekly.

Northampton Borough Council
Finance Department

Senior Systems Analyst

£61/2 - £6232-£6080 p.a.
(inclusive of supplement)

Applicants for this challenging and interesting post should have approximately 3 years' experience in Systems Analysis and be capable of undertaking new projects from beginning to end.

The Council operates an ICL 84K 1902T Computer with disc and tape backing, on-line video and cash receiving terminals and key-edit magnetic tape input. The communications network is in process of expansion. Starting salary will be commensurate with qualifications and experience.

Temporary lodgings or travelling expenses; disturbance allowance; assistance with removal expenses and estate agents' /solicitors' fees in approved cases. Housing accommodation may be available.

Application forms are available from the Chief Executive and Town Clerk (Personnel), Northampton Borough Council, 61 Damgate, Northampton NN1 1UW. Telephone Northampton (0804) 34881, Ext. 883.

Completed forms to be returned by not later than June 11th, 1979.

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£6000 + CAR

We require persons with 2-3 years' experience of Systems Analysis and a sound knowledge of RPG2.

The successful applicants will be expected to play a major role in the implementation of customers IBM, S/32, S/34 & S/38 Computers.

The duties involve providing support to established customers, some of whom will be linked to our S/34. Design, Programming and Implementation of on-line systems.

User Contact and Travel, possibly to Europe, make these posts of considerable interest to those individuals who enjoy variety and commitment.

For more details contact: Jeff Sears, Orwell Data Services Ltd., 84 Fore Street, Ipswich - Tel. 0473 58523/22174.

The projects involve on-line applications using CICS and/or DL/I. You will be using such equipment as an IBM 370/138 with 512K running under DOS/V and Power/V and an additional machine due to be installed this year. All the programme updating is done on-line VDU's using SPMOL and there are communication links to Antwerp in Belgium, Troy, USA and Cologne in Germany used for data transfer and transplanting of systems.

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Any supplementary training necessary will be provided by us. We offer a salary of up to £6,700 p.a. including

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UNIVERSITY OF
LONDON
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The University of London Computer Centre provides a regional computer service to the University of London and to Universities in the South-East and South-West of England. The Centre is equipped with Control Data 7600, 6600, 6400 and CYBER 72 computers and supports a large communications network of over 60 remote batch terminals and 30 keyboard terminals.

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Two Senior Analyst/Programmers are required to assist in the evaluation of computer systems which are under consideration as part of the Centre's development plan. The successful applicants will join a small section which is currently involved in design and evaluation and will become the software installation team for the new systems.

The work will include a significant development content in a multiple system environment.

Candidates for these posts should have several years of experience in operating systems development or support. Experience with computer selection or with multiple computer systems would be an advantage.

Analyst/Programmer

Systems Integration

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Analyst/Programmer

Compilers and Graphics

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Analyst/Programmer

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Further details and application forms are available from Miss H. M. Gubby, ULCC, 20 Guillard Street, London WC1N 1QZ. Telephone: 01-405 8400.

Applications close two weeks after the appearance of this advertisement.



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RESEARCH
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TENTH ANNIVERSARY

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Closing date for applications: 7th June.

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For more information, submit your Curriculum Vitae in confidence to the address below by June 8. Our representatives will be in London to conduct interviews starting June 18. Qualified candidates will be contacted by telephone to arrange interview appointments.



NAS House
42A Bow Lane
London, England EC4M 9EU
Attention: SACL

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The computer system — developed with the Computer Bureau — will need to progress to planned growth and the requirements of its retailing partners.

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